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ORIGINAL ARTICLES.

THE ADVANTAGES OF EARLY SURGICAL INTERVENTION IN BORDER-LAND CASES.[1]

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IT is by no means an easy task for one who confines his researches and his clinical work within as narrow lines as does the writer to prepare a paper for an occasion like this, which shall be of interest to a large number of experienced general practitioners. It has been therefore with no little hesitation that I have selected as my topic "The Advantage of Early Surgical Intervention in So-called Border-land Cases." The term has crept into such common use of late that no definition need be attempted of the cases which should be placed within this so-called border-land. The physician, as such, has had occasion many a time to complain of the gradual encroachment of the surgeon upon what he has considered his own territory, and internists have seen themselves pushed, as it were, from one part to another and have been compelled to sit almost idly by and see the gradual invasion of organs, one after another, which until recently were exempt from the surgeon's manipulations. Some feeling has even crept up between the camps of their respective followers and not a few expressions of jealousy have been voiced in journals and in public meetings regarding this unexpected and, to the physicians, undesirable invasion. But we, as conscientious men, may well agree to disregard all other considerations save the welfare of the patients themselves, and we may at the same time, to mutual advantage, rehearse some of the reasons for this encroachment and inquire with solicitude regarding them.

Another aspect of this same old dispute was voiced but a few months ago when Dr. Fitz[2] of Boston read before the New York Academy of Medicine an admirable address on "Some Surgical Tendencies from the Medical Point of View" in which he took a position, in which doubtless he is most consistent and most sincere, which well illustrates the honest physician's point of view. In this paper he drew rather unfavorable comparisons between medical and operative treatment of certain cases commonly regarded by physicians as hopeless, and alluded rather pointedly to the fact that death not infrequently results from operations, or that, if relief be thereby afforded, it is often disappointingly short, and that sometimes the last state of these patients is worse than their first. He acknowledges that general recognition of this fact has led the surgeon to request the earlier transfer of these cases, not only at a time when the disease is not so far advanced, but even before a diagnosis is made and while the physician is still awaiting developments. In corroboration of his view he presents a table of ten years' work done in the Massachusetts General Hospital, showing that in from 60 to 90 per cent., varying according to the year, of exploratory laparotomies there had resulted failure to relieve or to cure.

His statistics are plain and undeniable and yet it seems to me that such argument is a complete *non sequitur*. As a surgeon I would not hesitate to say that nearly all, if not all, of these cases should have been explored much earlier than was done, and that had the Boston surgeons applied the abundant resources of their art early the figures would have been notably altered. It is because I believe that Dr. Fitz voices the sentiments of a large number of general practitioners, who take but little interest in general surgery, that it is my avowed purpose to take the other side of this controversy and present numerous illustrations of not only the advantage, but the inestimable importance of early surgical intervention in these cases, as contrasted with the disadvantages of late attack.

Let us take the general operative surgery of malignant disease in any surgically accessible part of the body. The best surgeons of to-day believe that cancer is a local disease, at least in the beginning, probably an infection, and that, if radically attacked while still a local lesion, it can often be cured, the proportion of cures depending on the early date and thorough character of such operation. Obviously the difficulty is to make an early diagnosis and to secure the consent of patients at a favorably early date; nevertheless, the truth of these statements is so positive that I would not hesitate to lay it down for general guidance, as I teach, that *a well-founded suspicion of cancer justifies an operation for its determination and relief.*

If to any fair-minded man were submitted the following question, "Which is the best in the long run: To make an occasional unnecessary exploration, or to counsel delay until malignant disease is easily recognizable, and when it is too often too late?" I do not believe there would be any doubt as to the reply.

Let us take Dr. Fitz's own presentation of the questionable utility of gastrectomies, or of Kraske operations for cancer of the rectum and, conceding the questionable propriety of these measures, face the condition squarely. Has not every such case probably passed through the hands of several physicians, and have not these

[1] Address on Surgery before the Illinois State Medical Society, Quincy, Ills., May 20, 1902.

[2] MEDICAL NEWS, Dec. 28, 1901, p. 1059.

gentlemen lost valuable time in studying it for diagnostic purposes and then dallied and delayed with drugs? Every case that has passed on to a point where such desperate expedients need be resorted to is of itself a reflection on the judgment of the physicians who have failed to propose early surgical relief. Highly, then, as I esteem the talent and diagnostic skill of men like Fitz, I must nevertheless take issue with them on their arraignment of us in these hopeless cases and claim that the onus is on those who wait until they are hopeless before proposing surgical intervention. At the same time I thoroughly agree with him that harmful operations should be avoided, that we should always abstain from harm-doing, and that we should cultivate accuracy in diagnosis and knowledge of pathology, since by these "the surgeon will become a better adviser," though "the number and variety of his operations" will, in my judgment, not be lessened but extended. If my own experience, for instance, is a criterion, I would say that these cases rarely come to me for surgery until they have passed through the hands of several physicians, who are too often tempted to retain them until it is a question of desperate expedients as a last resort. And when, after full explanation and truth-telling, the patient voluntarily takes the risk of such measures, these very physicians are too often tempted to shrug their shoulders and say, by imputation at least, "Well, I did not believe an operation would help him, anyway." Thus the surgeon is made to assume the responsibility for a delay which has been counseled by others.

You see, the tendency has been in time past, to use a very common expression, to "save these cases from the surgeon." Many and many a time I have had a doctor tell me that he has kept a patient out of my hands as long as he could, when in truth, he has been guilty of the greatest indiscretion in not invoking surgery long before. How many lives has this policy cost? The profession has yet to learn that true conservatism means, if I may coin a word, *preservatism*, and that this is to be secured only by early attack.

Let us now take certain typical diseases of special organs and systems and rehearse some of the conspicuous illustrations of the truth of these statements. Of diseases ordinarily accredited to the nervous system there is perhaps none more common than *epilepsy*, whether traumatic or focal, or which, when assuming Jacksonian type, calls more loudly for surgical intervention. These cases at first go invariably to the general practitioners and from them often to the nerve specialists, the latter being more keenly alive to the possibilities of surgery than the former, but a period varying from months to years is usually wasted, during which conventional internal treatment is carried out and much time is lost, during which the epileptic habit, or epileptic dementia, is more positively declaring itself. Only at last, as a rule, when the futility of drug-treatment has been established, does the general practitioner begin to consider what may be done by surgery. And so these cases come into the surgeon's hands with the status epilepticus well-marked, or, with dementia as their most prominent feature, and he is expected to remove not only the local lesion, but to clear up the clouded intellect and to break up the bad habit of the nervous system. Not once in five times am I consulted about a case of epilepsy when there is any fair prospect of accomplishing what might have been accomplished had the case been surgically attacked earlier.

Meningitis.—If the dural cavity were to be treated on those broad general principles which obtain in treatment of infections of the peritoneum, we should see much earlier opening and flushing of the same. We have forgotten the lessons enunciated by the younger Gross during the Civil War, who reported a number of cases of septic meningitis following injury which were trephined and washed out; and Souchon's suggestion of drilling numerous small openings in the skull and using these for irrigation has not been received with the favor which it deserves.

Lumbar puncture is another measure which has not yet come into sufficient favor with the gentlemen who practise internal medicine. By its availability, not only for producing surgical anesthesia, but for exploration and determination of cerebrospinal fluid, or for recognition of bacteria, and for therapeutic purposes, as well by injection as by tapping (for example, in cases of hydrocephalus), it deserves more frequent resort than it enjoys.

In *tetanus* there is but one really efficient and semi-reliable remedy and this is the antitoxin; but this, as in the case of diphtheria, must be used early and freely. Its introduction into the frontal portion of the brain or into the subdural space requires the distinctly surgical operation of trephining, but it may be used to very great advantage without this formidable procedure. The main thing is to use it early and in sufficient quantity. It is unfair to expect of any of the antitoxins that they can have the same effect late in an infectious disease of which they are capable when used in the beginning. It was my good fortune, for example, not long ago to treat a case of this kind at home, in connection with Dr. Dorr, who recognized the disease in its incipiency and promptly gave the coveted opportunity. In this instance we used 23 vials of antitetanic serum and had the pleasure of seeing our patient completely recover. It was a case of the so-called Fourth-of-July toy-pistol type. Seeing it so early I did not feel it necessary to trephine.

Much might be said with regard to surgical attack upon the *nerve-trunks* when the operations for grafting, resection, elongation, exsection, etc., are called for. Too often the physicians treat these cases by electricity, delaying until there has been degeneration of the nerve-ends, as well as of the muscle, and when processes of surgical repair must be much more tedious or even doubtful. Of the various neuralgias, it is especially those involving the facial or sciatic nerves that I wish

to speak. It happens so often that these cases are treated by gelsemium, nitroglycerin and other vaunted specifics, as well as by opium and those drugs which not only allay pain but wreck the nervous system, until they have reached a point when elimination is seriously impaired and they are constitutional wrecks. Finally, when human nature can bear no more they are put in the surgeon's hands with the expectation that he shall meet with prompt and final success, although their condition in every particular is toxemic and unfavorable. Such a patient may stand elongation of the sciatic nerve, but when subjected to removal of the Gasserian ganglion, his tired nature may fail to afford the recuperative powers which he needs.

With regard to the *ductless glands*, especially the thyroid, I will not detain you with a summary of the time wasted in iodine applications, iodine injections and treatment of that kind. If an enlarged thyroid can be easily reduced by iodine or thyroid extract, or any other internal measure, there is, of course, no reason why it should be subjected to surgery, but such measures will prove or disprove their own efficiency within a few weeks and there is no reason why these cases should be allowed to go on until enormous size is reached before putting them in the surgeon's hands, except either the wilfulness of the physician or the cowardice of the patient. Even in exophthalmic goiter, that disease which used to be considered as *par excellence* the one to be treated by the medical specialist, we have learned that when drugs fail, as they often will, there should be early resort either to extirpation of the thyroid itself or to Jonnesco's operation of excision of the cervical sympathetic, which in many severe cases has given far better results, and vastly more promptly, than have been afforded by any other means.

Were I a specialist in throat and nose diseases I should probably take time here to linger upon the numerous cases of so-called *asthma* which have been treated for months or years by various drugs and narcotics which have promptly disappeared after the removal of certain well-known intranasal conditions or lesions of adjoining parts. It will be enough, however, if I simply remind you that when a source of reflex disturbances within the upper respiratory tract can be traced, it should be promptly removed even though this require a somewhat formidable surgical operation.

A very frequent condition of the neck in which delay is too often counseled is that of *tuberculosis of the cervical lymph-nodes*, whether moderate or extreme in degree. Here months and years are often wasted in futile administration of cod-liver oil or of vaunted specifics, when, although the conspicuous lesion is in the lymph-nodes, the trouble has really originated in the tonsils, in the nasopharynx or in the teeth. The first thing to be done with these cases, obviously, is to remove the source and origin of infection. This may be to remove postnasal adenoids or the tonsils, or to send the patient to a competent dentist. The source of infection being thus removed, there is then some opportunity for specific drugs to exert their expected or desired effect, or there is then a fair opportunity for the surgeon who may see fit to enucleate the diseased parts, and this he will certainly prefer to do, if possible, before secondary infection shall have produced infiltration of and adhesion to all the surrounding structures. It would appear, then, that primary treatment of cervical tuberculosis must begin usually in the oro- or nasopharynx.

Pulmonary Abscess and Gangrene.—In these conditions what spray or application can reach the abscess cavity in any amount that shall be effective? There is ordinarily but one excuse for failure to operate early upon these cases and that is the sometimes insuperable difficulty of locating the lesion and deciding just where to operate. The same is true of certain cases of extensive bronchiectasis in which the cavity is so large and contains such an amount of fetid mucopus as to amount practically to an abscess.

Empyema.—I have a general rule which applies to every collection of pus, for that matter whether circumscribed or diffuse. It is this: *Pus allowed to remain will do more harm than can the surgeon's knife if judiciously used.* This applies to every part of the body and is a very conspicuous truth when we have a chest filled with pus. If these cases were not kept so long under medical treatment, waiting for that absorption which does not occur, we should have far fewer cases in which extensive resection of the chest is called for. When the physician has waited until the pleura is half an inch thick before he permits or advises an operation, he has encouraged the formation of an abscess with walls like sole-leather, scarcely capable of yielding, and which require a long time to come together by the granulating process.

Heart.—Some years ago Roberts published a monograph on the surgery of the pericardium which opened the eyes, especially of the American profession, to the opportunities of and indications for aspiration and drainage of the pericardial cavity. The lessons which he taught fifteen years ago, like those which have been taught by others before and especially since that time, have been either forgotten or not widely enough inculcated. Men will still persist in letting the heart work itself to death in consequence of the pressure of a distended sac, instead of tapping the pericardium early, or even opening it and draining it if pus be present. It needs still to be widely taught and emphasized that when the pericardium is distended with serous fluid, it should be aspirated and that when this fluid is pus, a thoracotomy should be done and the pericardium actually opened and drained by gauze or by tubing. This will prove life-saving when death might result without it. A lesson of my earliest years in practice when I did a foolish thing has, nevertheless, not been lost upon me. Before I had left one of the hospitals where I

was serving as interne, I plunged an aspirating needle one night into the pericardial sac, as I supposed, of a man who was suffering from frightful embarrassment of its action, and gave temporary relief. After a few hours, however, he died and autopsy showed that I had gone through the fluid in the pericardial sac and that the point of the needle had actually entered and almost completely emptied an abscess in the heart-wall, because the cavity was nearly empty and the fluid that I drew off was pus, not serum. Since then I have had much less hesitation in introducing a needle in this region.

Strangely enough, one of the most daring of suggestions in a surgical way has come from Brunton,[1] who has been so widely known as a writer on therapeutics. He has recently proposed surgical intervention for the relief of *mitral stenosis* by exposing the heart within the pericardial sac, after raising a trap-door in the chest-wall, then dividing the stenosed mitral opening by the introduction of a fine knife, like that used for cataract. He was led to this proposition by experience in experimental therapeutics, but I imagine it will be some time before a surgeon will be found so bold as to resort to it in man.

Liver.—Abscess in this organ is too often allowed to remain unopened instead of being attacked early. A suspicion of pus in the liver warrants its exploration with the aspirating needle. No harm comes of putting such a needle into the liver. On the contrary, although the measure itself may be painful, relief is often afforded to pain and resolution of inflammatory lesions is stimulated. I have seen this repeatedly in the case of others and have even had to experience both this pain and this relief myself. In my estimation the liver ought to be explored in this way much oftener than it is.

Tumors of the liver are now successfully attacked and success comes in proportion to the promptness of this attack. While writing this paragraph I have heard from a patient upon whom nearly three years ago I operated because she had a tumor projecting downward from the liver. She was a very large, stout woman and a definite diagnosis could not be made, although the gall-bladder was evidently the seat of the lesion. After reaching it I found that the gall-bladder was much enlarged, contained calculi, was cancerous and that the surrounding portion of the liver was also involved in the cancerous infiltration. The entire gall-bladder, together with this infiltrated portion of the liver, was completely excised, oozing checked partly by suture, partly by cautery, and partly by pressure of drains, and the woman rapidly and completely recovered. My latest information, coming just at this juncture, is that she is as well and as hearty as ever.

Biliary Passages.—I would like to take much more time than can be spared me here in order to express convictions which I have recently formulated in regard to certain lesions of the gall-bladder. To epitomize them, I would remind you that there are several analogies between the gall-bladder and the appendix. Both are superfluous organs, both are to some extent at least reservoirs, both frequently contain concretions, both connect by small openings with the intestinal canal, both naturally contain some secretion, both are liable to constriction of outlet and a retention of contained material, and in both instances this material may undergo chemical changes which afford toxic matters that find ready entrance into the general circulation. In other words, both alike may produce by such disturbances a toxemia which shall be both lasting and serious. Further analogy is afforded by the clinical manifestations of their disorders, since pain, tenderness, indigestion so-called, or dyspepsia, with prostration, auto-intoxication and constipation, even widespread disturbances in secretion and elimination, are results alike of lesions of the appendix and that of the gall-bladder. Removal of the diseased appendix when producing such a train of symptoms is now accepted everywhere as a wise procedure, better carried out early than late. If my words and opinion can be counted for anything in the matter, there is, in probably fully as many cases, just as much reason for removal of the gall-bladder as of the appendix, though oftener for chronic lesions than for acute. We certainly do not see gangrenous processes so often in the gall-bladder as in the appendix. In a constantly-increasing proportion of instances I am now carrying out this principle, and I could cite a considerable number of cases of complete cholecystectomy, done within the past few months, on exactly the same principle and after a quite similar technic to those followed in removal of the appendix and with equally prompt and complete relief. Extirpation, then, is certainly the best operation for this condition when it can be carried out as it usually can be. It is much better than drainage or cholecystotomy or any other operation that I know of. I have now reached a point in my own belief and practice at which I can say not only that a suspicion of cholelithiasis justifies an exploration of the gall-bladder, but that when patients suffer from dyspeptic symptoms with pain and tenderness in the region of the gall-bladder, and especially with any evidence of biliary pigmentation, this region should be explored whether the gall-bladder can or can not be felt from the outside. This is a radical position, I realize, and yet I make the statement with equal positiveness and reason, based on a series of some scores of cases.

Pancreas.—The more acute the lesion of the pancreas, the more is immediate surgical intervention indicated. When we recall how disastrous may be an infection, a hemorrhage or an injury of this viscus, we must feel that in these cases every hour lost in securing surgical help is at fearful risk to the patient. There is but one successful treatment for these acute cases of pancreatitis, and that is afforded by the operative method. It should, moreover, be radical rather than moder-

[1] Lancet, Feb. 8, 1902.

ate. Of course in the slower cases there is perhaps more time, but even in these drugs are practically powerless. Moreover, the mixed relations of the biliary passages and the pancreas, which are now attracting wide attention, are of themselves anatomical features which conspire to make early exploration most desirable. Chronic pancreatitis is nearly always a factor in cases of chronic biliary obstruction, and advanced surgeons of to-day believe not only that chronic jaundice always justifies and demands operation, but that when this is done it should include investigation of the duodenum and of the head of the pancreas, as well as of the biliary passages proper, an investigation which may lead often to incision of the duodenum and exploration of the diverticulum of Vater. When chronic jaundice is accompanied by excessive appetite and thirst, and especially by fatty stools, complete exploration of the pancreatic region is particularly indicated.

Spleen.—We have still to abandon the ordinary leucemic and malarial spleen to the physician and concede that these lesions are far better treated by him than by us. There is, however, a particular disease in which the spleen affords the most conspicuous feature, known sometimes as *anemia splenica*, sometimes as splenomegaly, and often as Banti's disease because, though not first described by him, it is nevertheless quite generally called by his name in Italy and elsewhere. This disease is characterized by three stages, (1) one of anemia, which may last from three to ten months, (2) a stage of splenic enlargement, the so-called splenomegaly, and (3) a stage of ascites, the second stage being often transitional and of uncertain length, and the third terminating in from six to twelve months. There is often an accompanying enlargement of the liver, which must justify Banti's view that the disease is essentially a toxemia of intestinal origin. It is marked also by increased alkalinity of the blood and by a purpuric tendency to bleeding from all parts of the body, such as is seen in the slower pancreatic affections. In this disease drugs have proved of no avail and, as soon as it is recognized, the spleen should be extirpated, the prognosis being good both as far as the operation and the subsequent course of the disease are concerned.

Kidneys.—It has long been known that certain painful conditions of the kidney are associated with increase of renal tension due to an inelastic capsule, and some years ago it was suggested by Reginald Harrison that splitting the capsule might afford relief from renal tension and this constant pain. This became a recognized procedure. On the same principle it has been carried still farther by Edebohls[1] in all forms of chronic Bright's disease, it being immaterial whether this be of parenchymatous, interstitial or diffuse type. The theory upon which this measure is based is not only that it relieves tension, but that by decapsulation of the kidney adhesions are produced between the decorticated surface and the surrounding tissues, so that by means of new vessels what he calls hyperemization of the kidney tissue is permitted. This encourages regeneration of epithelium, and thus it comes about that the kidney becomes again quite capable of carrying on its function. Even when destruction of tubules by pressure of exudate has made this seem impossible, there are, nevertheless, rehabilitation and restitution of kidney function. This gradual restoration begins to occur within ten or fifteen days after operation and goes on indefinitely.

My own experience would lead me in some cases even further than this in the direction not merely of decapsulization, but of exploration of the pelvis of the kidney. One case which has led me to this statement is briefly as follows: A young woman, a graduate in medicine, was under my observation for over a year for a condition apparently of intermittent hydronephrosis which gave her at times intense pain; during the attacks I have felt the right kidney to be nearly as large as my double fist. The trouble was apparently due to kinking of the ureter, although there was a question of obstruction by calculus. Examinations of urine showed repeatedly such an amount of tube-casts and other evidences of renal disorganization from each kidney that I hesitated to operate. At last intense pain and suffering had stimulated her resolution to the point where she absolutely forced matters to operation, although at this time her daily output of urine was not over ten or twelve ounces. Nitrous oxide gas was the anesthetic used and exploration of the right kidney showed it to be unusually movable but apparently not enlarged. Not satisfied with freeing it from its surroundings and extensively loosening its capsule, I brought it to the surface of the wound and opening at the center of its greater curvature, thoroughly explored the pelvis with the finger-tip, finding nothing except a dilated pelvis. I plugged this opening with gauze, lowered the kidney into its place, suspended it upon two tapes of gauze, which were sewed to the skin margins, and closed the external wound with silkworm sutures. The gauze inserted into the kidney structure was allowed to remain for five days, the gauze tapes remained for about ten. From this opening in the kidney, after removal of the gauze, not a drop of urine ever escaped; within twenty-four hours she had doubled her previous production of urine, and within a few days was passing an almost normal amount. The urine also cleared up and now, at the expiration of nine months after the operation, she has scarcely any trace of the original condition. She has not, however, been entirely free from pain, although her relief has been very great. A case like this teaches one the advantage of radical handling of these organs and I have not hesitated to repeat it in other instances and always to my satisfaction.

Ascites.—Thelma, of Utrecht, noting new anastomoses between the portal and systemic veins while making autopsies on cases of ascites, sug-

[1] Medical Record, Dec. 21, 1901.

gested the propriety of producing adhesions between the peritoneum above with the liver and spleen and of the peritoneum of the abdominal wall with the omentum. The suggestion was first carried out by Vandermeule in 1889, although without success. Quite independently Morrison of Newcastle had made similar observations and he proposed deliberate friction of the opposed surfaces just mentioned, together with suture of the omentum to the abdominal wall, with drainage of the pelvis for a few days by a glass drain passed through a separate opening low down. These operative procedures constitute of course a deliberate attempt to short circuit, or rather to shut out of the circulation the obstructed portal vein, permitting the blood to pass directly from the portal terminals into the systemic veins. It is founded on anatomical relations and will succeed often if not resorted to too late. Brewer[1] has recently tabulated some 60 cases of which 38 have recovered, with 6 of them apparently positively cured and the majority very much improved. Inasmuch as the operation must be regarded as still in its experimental stage, it is to be feared that, as too often occurrs, patients will not be subjected to it until the cirrhosis, or other disease by which it is made necessary, is far advanced. My own experience with it is confined to two cases in which it was done very late and in which there was no conspicuous improvement.

Stomach.—There are three non-malignant diseases of the stomach which are conspicuously amenable to surgical intervention just as soon as diagnosis can be made. These are ulcer, either simple or perforated, benign obstruction, and dilatation. If diagnosis of these conditions cannot be made there is all the more reason for early exploration. The brilliant achievments of Mayo-Robson have shown how safe and how almost invariably successful these operations are and demonstrated how the work of even one man may lift a class of diseases and an entire organ out of the realm of empiricism into that of safe surgical treatment.

Gastric Cancer.—It is especially with regard to cancer of the stomach that I want to detain you for a few moments. Every one acknowledges that in order to be of value diagnosis must be early—that is, at a time when surgery offers a fair prospect of relief, since there is no real treatment for this condition except operation. To be sure, we realize that gastric cancer may run an exceedingly acute course and kill even within three months, and that for such cases there is as yet no help. Again, its course may be apparently latent, that is, without conspicuous gastric symptoms, even though frequent analyses be made. This is especially true when it follows ulcer. There is, as a rule, a latent period lasting from three to five months of mild gastric symptoms other than vague dyspepsia or something that passes under that name. At this time, of course, it is not possible to recognize it by any of the known tests. Gradual aggravation of symptoms with progressive emaciation constitute the most suggestive features of these cases in the early months. For their recognition each should have only its proper weight. About half of these cases occur under fifty years of age and it is worth while to remember that the disease is known in children. It has no characteristic subjective symptoms. Nausea, pain, anorexia, thirst, distention, dilatation, eructation, and vomiting, all of these may occur in other conditions, although vomiting is a symptom in about 80 per cent. of these cases. It is more rare when the openings are free, while the amount of the vomitus is simply an index as to the extent of the dilatation.

Pain, which comes usually early, becomes constant and may be referred in such a way as to be misleading. Hematemesis, at first slight, is a frequent accompaniment, but not so much so as in ulcer, nor is it so copious. The general depression and cachexia of cancer are common to malignant disease in any part of the body, although when the disease affects the stomach nutrition must be interfered with and there is more likely to occur a secondary hematogenous infection.

Study of the gastric functions shows that free HCl is usually, but not always absent. Inasmuch as only the central portion of the mucosa secretes this acid its absence may often be thus accounted for, because the pyloric end does not furnish it. On the other hand, the presence of free hydrochloric acid does not disprove cancer any more than its absence proves it. It is also absent in certain other conditions. The secretion of pepsin follows about the same rule or course. So far as lactic acid is concerned its absence does not mean nearly as much as its presence, which is always suggestive but not indicative. The stomach-contents in advanced cases may show tissue fragments having a distinct cancerous structure or containing karyokinetic figures, and these are pathognomonic when recognized, but they are never secured early and at most times only with difficulty. So with regard to the Oppler-Boas bacilli, which when present are of importance, but they, too, are not an early sign.

When, coupled with these signs and symptoms, there is distinct tumor in the epigastric region, it is generally supposed that diagnosis is fairly certain and reliable, and the surgeon rarely sees such a case until this period is reached, although some surgeons have regarded the presence of tumor as contraindicating operation, meaning thereby that it is then too late.

I have had, however, the fallacy of all these chemical and other tests so repeatedly demonstrated in my own work that I have come to feel that the diagnosis of carcinoma ventriculi is at times both difficult and uncertain. Thus, while preparing this paper, I operated upon a man who

[1] MEDICAL NEWS, Feb. 8, 1902, p. 241. See also Wier, Medical Record, 1899, Feb 11. Packard and Le Conte. Amer. Jour. Med. Sciences. 1901. Tilden Brown. Report of Presbyterian Hospital for 1899. Ito and Orni, Deutsche Zeitschrift für Chirurgie, 62, p. 141.

had been steadily failing, who referred all his symptoms to his stomach and his discomfort to his epigastrium, who had no free hydrochloric acid, but did have plenty of lactic acid in his stomach-contents, and who had a distinct tumor in the conventional region. Opening his abdomen, I was, I confess, not much surprised to find that his stomach was absolutely free from any sign of disease or obstruction, and that all his symptoms were referable to an old cholecystitis with adhesions, which furnished the tumor we felt behind the rectus and all his other signs and symptoms. Complete removal of the gall-bladder promptly relieved him of pain and started him on a course toward recovery. This case, by the way, which I expect to discuss in other aspects at another time, affords ample excuse for repeating the rule which I do not hesitate to lay down, namely, that all cases of pain and tenderness in the region of the gall-bladder, accompanied by stomach symptoms and evidences of even occasional biliary obstruction, call loudly for exploration of the region of the biliary passages.

I have rehearsed these features of cancer of the stomach in order to show thereby the impracticability, usually the impossibility, of recognizing gastric cancer early, the fallacy of the ordinary tests that apply, and the extreme unwisdom of waiting until tumor or cancer fragments or Oppler-Boas bacilli are found. Realizing all this, let us adopt this rule; let us say that every case of progressive stomach disturbance shall be operated, *i.e.*, at least explored, when, to the stomach symptoms themselves are added any two of the following symptoms: (1) Rapid emaciation; (2) achlorhydria; (3) reduced proteid digestion; (4) lactic acid; (5) Oppler-Boas bacilli; (6) suspicion of tumor.

If, now, this practice be adopted as a rule of conduct, I think I can assure you that the risk of an operation will prove far less than the risk of leaving the case undiagnosed. It needs to be everywhere and strenuously emphasized that stomach cancer is a surgical disease, to be dealt with by radical operation at the earliest possible moment. I am sure that both simple and cancerous disease of the stomach will hereafter come much more often under the knife than has hitherto been the case. See, for instance, what surgery may do for dilatation in which gastroplication affords positive relief; for ulcer, in which its exsection affords a radical cure; for benign strictures of the pylorus, in which plastic operations give most beautiful results; for hour-glass obstruction, in which anastomosis is of great benefit, and even for gastroptosis, in which gastrorrhaphy may be of much avail. Of all these it may be said that, while internal treatment may alleviate, it can never cure.

Duodenum.—The lesions here which are most amenable to surgery are those of perforating and non-perforating ulcer, cancer being extremely rare in the duodenum. For these conditions, if anything is to be done, it must be by surgery alone. In most individuals the duodenum can be so exposed as to permit of opening, exploration and even exsection of localized lesions.

Small Intestine.—Cancer and all other forms of obstruction of the small intestine are distinctly surgical lesions. Only by operation can anything be accomplished, but this operation must be early if we are to avoid deep or widespread lymphatic involvement. The slightest positive evidence of continual or increasing obstruction of the bowel should, therefore, be followed by exploratory operation.

Cecum and Appendix.—Early operation in cases of appendicitis has been urged and insisted upon so many times and by so many writers that at this point I need only mention it to show that it is not forgotten. Perhaps the wisdom of early intervention is not shown more positively in any disease which one can think of than in this. So many other surgeons, however, have done full justice to the disadvantages of delay, nay the fatality of delay, that I shall not take your time here by adding to what has been better said. I would simply like to record myself here as siding with those who feel that in acute diseases early operation is always wise and expedient, no matter whether or not it may transpire that cases get well without it. Early operation is always advisable and will always be commended by good surgical judgment.

The Lower Bowel.—So far as the colon and rectum are concerned I would say that I never have treated a case of malignant or non-malignant stricture of this tube which had not already passed through the hands of others, being treated for dysentery, or piles, or something of that kind. In my own case I do not have to make a single exception to this statement. Too often they have long passed beyond the period when even those formidable operations, to which Dr. Fitz takes exception, would be of any lasting benefit, and too often I have had to make a simple colostomy, feeling that the golden time for radical surgery had passed under medical auspices and that the best vital interests of the patient would be conserved by less radical attack.

Incidentally, also, I would call attention to the wisdom of early surgery in cases of minor importance such as anal ulcer, fissure, etc., in which patients are encouraged under medical advice to fool away months or years of time with ointments or local applications, when a good, thorough stretching of the sphincter or curetting of the ulcer would afford complete and final relief. I have known more than one instance of melancholia and of mania relieved by attention of this kind, the patients being thus redeemed from the grasp of the asylums.

Obstruction of the Bowel.—Again it is the lot of every surgeon to see case after case, when it is too late, when not only time but the strength and vitality of the patient have been sacrificed by the internal use of cathartics and purgatives and even the bowel ruptured by too enthusiastic use of irrigations. I think I may say that I never yet

have operated on a case of this kind in which there was not the best of reason for regretting the time thus wasted.

So too of *dysentery*. There are not a few cases of obstinate dysentery, in which the patients' lives are made miserable and their time and money wasted by futile internal treatment, when a colostomy on the right side for purposes of physiological rest of the colon with a later closure of the artificial anus at the proper time would give prompt relief.

Tuberculous Peritonitis.—Regarding operation in this condition, the surgeons are as yet somewhat divided among themselves. The late Dr. Fenger, a warm personal friend in whose surgical acumen I had unlimited confidence, took an attitude in this controversy with which I never could agree. He questioned the advisability and the wisdom of the ordinary abdominal section as often made for this condition. All this shows how men's experiences differ. Within a year past I have had four cases which so distinctly and beautifully illustrated the benefit of this operation that I should feel as though it were denying a patient an extremely hopeful procedure were it to be refused under these circumstances. Although I have washed out all of these cases with silver solution, I did not attribute the resulting apparent cures so much to the silver salts as I did to the general procedure which seems to me most wise and promising; promising, at least, a great deal more than can be offered by internal measures alone.

But I could continue this list of illustrations by the hour, long after you were wearied with them. I shall leave out, therefore, the whole category of genito-urinary disorders and the pelvic lesions of women, among which could be found just as striking examples of the wisdom of early intervention. I even resist the very strong temptation to speak of the various conditions called rheumatism which are not rheumatism at all, including acute osteomyelitis, bone-abscess, tuberculous joint diseases, etc., the distinctly surgical character and therapeutics of which are too often overlooked by general practitioners. An entire hour might easily be devoted to the so-called rheumatisms which are not rheumatism at all.

Fearing even now lest you have been wearied I would conclude these remarks by one or two disclaimers. In all that has been said I have never meant to hold up surgery as a panacea for all ills. The man who voices such sentiments as I have expressed might even be accused of having interested motives, yet the facts remain that, if our sole aim is to give final and complete relief in the shortest time, the surgical route often affords it. By availing himself of surgical measures a patient may often be cured while, according to the older routine, the physician would still be studying to make a diagnosis. Thus, by surgery, may often be done the greatest good to the greatest number in the shortest time. Therefore, I protest again that it is too bad to blame us for lack of success in advanced cases and at the same time to keep us from securing these cases early instead of late.

In justice to myself, in closing, I simply want to disclaim any intention of offending a large class of men, capable, competent and sincere general practitioners, upon whom my remarks might otherwise seem to reflect. They are so busy with their legitimate duties and concern themselves so much with internal therapeutics, in which they are such masters, that the worst I could or would say of them is that their line of research does not include the surgical measures which I so warmly advocate, and it is scarcely to be expected that they should be as well informed in one direction as in the other. But few of these worthy gentlemen are so hidebound as not to recognize broad general truths, and few, if any, of them are selfish enough to keep patients from securing the best that can be afforded, whether it comes through medical or through surgical hands. Conventional and conservative most of them certainly are and that is why we get our cases so late. That, too, is why I have talked to you as I have to-day. One other thing needs be said: I well realize how often it happens that when physicians advise an early operation, the patient will not consent, the mere thought of surgery being enough to entirely upset the equanimity of a certain portion of human beings. If patients thus deliberately deprive themselves of that which can be done for them, we may regret it, but it is not the fault of our profession. Too often, also, the physician speaks of it in such a half-hearted way that he fails to convince. It would seem possible, however, by educating the laity and by familiarizing them with the progress of our art, to bring about a gradual revulsion of feeling, so that patients can be brought to consent early to that which is for their real interest.

A REVIEW OF THE PROGRESS OF THERAPEUTICS FOR THE LAST TWELVE MONTHS.[1]

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In commencing the scientific program of the third annual meeting of the American Therapeutic Society, I would offer congratulations upon the remarkable interest in therapeutics which has been awakened, for which the Society is in a large measure responsible. The medical journals are devoting increased space to the subject. The year-books are mostly dependent upon therapeutics for their chief interest. The practical papers are those sought for by the Societies. The practitioner demands more of the consultant than a diagnosis, "How shall we best cope with disease and help the patient?"—a demand that only the trained therapeutist can meet. Not only the physician-specialist and the general prac-

[1] Presidential address delivered before the American Therapeutic Society, New York, on May 13th, 1903.

titioner are interested in our work, but specialists of every sort look to us for aid. On the other hand, the fact that distinguished specialists, at our invitation, honor us by their presence and papers, indicates not only the interdependence of the differential parts of the body medical, but that complete knowledge can result only from their integration. Measures of which we know the general principles are returned to us by those working within closely-defined boundaries with their special applications determined and codified. Physician-specialist and surgeon-specialist, general practitioner and limited specialist meet on the highest plane of the healing art, that before which all the rest of medical science is elementary and preliminary—how to cure sick people. While some will tell us what of greatest moment, in their opinion, has been recorded in their especial fields, we are quite sure that they will learn from pure therapeutics many measures which will find application with or without modification in special work. Nothing which pertains to man is foreign to our interest, but that which devotes itself to removing mankind from sickness to health is worthy of our best brains, most painstaking industry and conscientious efforts. If you will glance over the program you will be sure that the most captious critic would be silenced. We intend to have outspoken, honest and intelligent therapeutics, with all cranks, faddists and mediocrity eliminated. The laboratory and the hospital will give their conclusions, the library and the clinic will add their share, and all for the benefit of suffering humanity.

The following report is based upon the literature of the past year as it has been reviewed, and most of the methods and remedies have been verified by me. I have purposely abstained from mentioning some subjects which will be presented by other speakers, notably Röntgen-therapy and the use of organic extracts.

Suprarenal extract, either as adrenalin or epinephrin, has excited considerable discussion as to its chemical constitution. Abel concludes as follows:

(1) The blood-pressure-raising constituent of the suprarenal gland may be isolated by the method described by him in the form of a basic, minutely crystalline, though unstable compound, which agrees in some of its properties with the substance that he has called epinephrin, while it fails to exhibit certain other equally fundamental and characteristics properties of this substance. (2) Mineral acids, however, easily convert this substances into one which is physiologically active and which also gives all the characteristic reactions of the epinephrin, $C_{10}H_{11}NO_3$, contained in his former series of compounds. Highly soluble and apparently stable salts of therapeutic and chemical importance are therefore easily made. (3) Analyses of the substances described will soon be given to show what changes, if any, in elementary composition take place under the influence of the acids used in the conversion; also how these new compounds of epinephrin will agree in composition with those of his former series; also, how far the substance isolated by the zinc process agrees in composition with the similar and probably identical compound contained in the material analyzed by Aldrich and Takamine. So far as its astringent and hemostatic properties go, there is practically a consensus of opinion. The list of conditions in which it is useful continues to be enlarged and it is a real addition to our armamentarium. Adrenalin hydrochloride should generally be employed in strength of 1-1,000 (1-500 for eye-work, Bulson). As an anesthetic more time is required than for cocaine (ten to fifteen minutes). As a hemostatic, it seems to be safer and more lasting than the latter. Cautions as to the use of suprarenal extract were mentioned last year. Suprarenal extract given internally for hay-fever is in increasing vogue.

Diphtheria antitoxin has now established a secure position notwithstanding the unfortunate tetanus epidemics which have probably been due to carelessness in the preparation or putting up of the serum. If politics in and out of local boards of health could be eliminated, doubtless this objection would be removed.

There is but little encouragement for the use of antitetanic serum, perhaps because the statistics reported are too few. Lamker has collected fifty-two cases of intracerebral injections, with thirty-three deaths—sixty-three per cent.—in a majority of which both intravenous and subcutaneous injections were also made. If these statistics be compared with those without intracerebral injections, we are not favorably impressed with the new method.

Calmette's antivenomous serum has been successfully used in a few instances.

Antistreptococcic serum has made some, not marked, progress towards acceptance. It is certainly not a routine remedy, but should be reserved for desperate cases.

Antipneumococcic serum is still *sub judice*, so for as known the results being in no instance comparable to those obtained by massive doses of creosote as an organic salt, as shown by the reports of Weber, Thomson and Wilcox.

Inoculation against enteric fever has been practised with a fair degree of success and the matter, in spite of Melville's unfavorable reports, is well worthy further investigation. Wright has studied the blood-changes after antityphoid inoculation. He found when vigorous reaction occurred that the bactericidal power of the blood decreased and the susceptibility to typhoid fever increased for from two to three weeks, but that afterward these conditions were reversed. He found that there is a definite limit beyond which the bactericidal power of the blood cannot be increased by inoculation with sterilized cultures of typhoid bacilli.

Antiplague serum, either that of Yersin, Roux or Lustig and Galeotti seems to influence favorably the disease without danger to the patient.

Coley is still working upon the mixed toxins of erysipelas and bacillus prodigiosus in inoperable malignant growths, chiefly sarcomata.

Wendlestadt was led by the close relationship of leech extract to the ferments and the animal and vegetable poisons with which an immunity can be produced to experiment with the view of developing an antibody. The heads of leeches were triturated with powdered glass, the resulting mass extracted with the normal salt solution and filtered so that twenty cubic centimeters corresponded to fifteen leeches. The extract was then injected subcutaneously or intraperitoneally into rabbits, in doses of from one to five cubic centimeters. Many animals died from sepsis or peritonitis, since it was not thought wise to sterilize the material. The serum of the five rabbits which had survived the injection of large doses showed a distinct reaction toward the extract in that the inhibitory action of the latter on clotting disappeared to a certain extent. By heating the serum up to 134 to 140° F. it was rendered partially inactive. It was found that the antibody develops after twenty-four hours; the maximum reaction is reached after forty-eight hours, but there still is some present two and three weeks after the injection. The proof that the antibody is really a specific one lies in the fact that the serum from injected animals, if mixed with blood, clotted in exactly the same time as does normal serum with blood. The author also succeeded in causing the production of an antiserum which naturally had much the same effect on coagulation as the original leech extract. The active principle here is not affected by heat. The origin of the various antibodies was found to be the pancreas and, to a less degree, the liver and kidneys.

Bashford has been investigating the question of immunity, in consideration of the many uncontrollable factors which form important chapters in the study of immunity toward bacterial toxins, since it seemed proper to ascertain whether a similar protective mechanism could be induced by chemically simpler bodies and thus an insight into the chemistry and physiology of the process be obtained. Pohl would seem to show that indeed such is possible, for he has found that rabbits could be immunized by gradually-increasing doses of solanin, so that this drug no longer caused a hemolytic action upon the red cells. Bashford, however, from his individual work, claims that this is not so; indeed, the red cells of a rabbit treated with solanin were found to be more, instead of less, sensitive to the action of this drug. This increased susceptibility may be explained as due to anemia which had developed in the animals as a result of the repeated injections. Two rabbits were selected; one was treated for twenty-five days with almost fatal doses, twelve in number; the second left undisturbed, when a dose exceeding the fatal one was then injected; both died in approximately the same time.

As to the spinal use of cocaine, Reclus noting the six, possibly eight, deaths due to this method, contends that it gives a less degree of security than do our ordinary anesthetics, so that until further proof is furnished, ether, chloroform, and the local use of cocaine cannot without injustice and danger be dethroned even partially from their present eminence. Guinard quotes Ravoul and Aubourg to show that an injection into the arachnoid space gives rise to a defensive movement in the vessels (no doubt by vasodilatation), which is accompanied by a leucocytic infiltration into the spinal liquid and by hypertension. The more intense this defensive process is—and this depends on individual susceptibility— the greater the headache, rise of temperature, etc. The author's method consists in withdrawing a sufficient quantity of the spinal liquid itself for use as a vehicle in which to dissolve the cocaine used for injection. This seems to be a near approach to the ideal, for by this method but few foreign elements are introduced. Quinine, according to Jaboulay, is superior to cocaine, when injected into the subarachnoid space, in causing analgesia which, although less in extent, lasts two weeks. Its use is suggested for cystitis, local cancer, sciatica and other neuralgias and neurites situated in the lower extremities. Albarran and Cathelin have treated urinary incontinence by intraspinal injections of serum or of cocaine. Success resulted in thirteen of fifteen patients treated. Generally two or three injections at the interval of a day, and later on oftener, may be required. Mariotti suggests the intra-arachnoid injections of carbolic acid, corrosive sublimate or iodine in dose sufficient to destroy micro-organisms without producing toxic effects—about the usual hypodermatic dose—for cerebrospinal infections. In dogs no unfavorable symptoms were observed even when the injections were repeated. From careful experiments he proved that the injections might extend even as high as the fourth cervical vertebra; others have claimed that they reached the brain.

White has proposed the injection beneath the cerebral cortex of half a dram of benzoyluinyldiacetonalkamin, in a sterile two-per-cent. solution with a view to producing a local sedative effect. This might, according to Jelliffe, have a possible antidotal effect upon a theoretical toxin, antagonize the action of an autogenous poison or of an invading microbe, or it might act by improving nutrition in some unknown way. Time alone will determine the value of this procedure.

On general anesthesia a very large number of papers has appeared. The burden of most of them is better education and larger experience for the anesthetist and pleas for the recognition of anesthetization as a specialty. With this the reviewer, remembering a score of years of hospital service, is most heartily in accord. Becker has carried on about five hundred narcoses with ether to which ½-of-1-per-cent. oil of pine (*oleum pini pumilionis*) has been added. With this plan ether may be employed in bronchitis, pulmonary tuberculosis, empyema and the emphysema of old people. No aggravation of the dis-

case has been noticed. The ether is not rendered unfit for inhalation, but rather improved, because these ethereal oils greedily take up oxygen and have ozonizing properties.

Cumston has reported on calcium hydrosulphide, as a paste, used as a depilatory which does not irritate, cause pain nor leave any after-effects.

Carbolic acid has received much attention, both as an internal and as a local remedy. In cases of poisoning by it, and they are by no means infrequent, various antidotes are recommended, but 95 per cent. alcohol remains the most effective.

Gautier repeats his encomiums on cacodylic acid (dimethyl arsenic) as a sodium salt, and much has appeared during the past year. In addition to the ordinary uses of arsenic, over which it apparently possesses the advantage of larger doses and, if given hypodermatically, fewer instances of untoward effects, tuberculosis, sarcomatosis and carcinomatosis have been benefited. Murell's report on sodium cacodylate should make us quite as cautious as we are with other forms of arsenic. On the whole, its use has been gradually increasing and, if the usual precautions are observed, it should be satisfactory. Since all new remedies must pass through the period of criticism, we are of the opinion that this has now gotten upon an established base.

Gelatin is strongly recommended in hemoptysis by Castaing and in hematuria by Schwabe. It is contraindicated in acute nephritis only. In hemophilia, purpura and in the hemorrhagic forms of acute nephritis, it is probably the best remedy. Subcutaneously about ten ounces of a 1-per-cent. solution are required. Zibell, after noting the various uses of gelatin as a hemostatic, has reached the conclusion that it is the contained lime which causes this phenomenon. In this way he harmonizes the observations upon this substance with those upon such lime salts as calcium chloride. Calcium chloride by increasing the coagulability of the blood has been the subject of but few reports and those are satisfactory. Menorrhgia is the latest addition to the list of indications.

Iodine in sesame oil (10- to 25-per-cent. solution), up to six drams by injection into the muscles of the back, seems to be useful in tertiary syphilis and by the mouth in bronchitis, pleurisy and various glandular inflammations. As a method of giving intensive doses in syphilis it is to be recommended.

Resorcin has apparently found new uses, (1) as a spray, one-third of one per cent. with an acidulated solution of quinine, in whooping-cough, (2) as a preservative of solutions of suprarenal extract, (3) as a 30-per-cent. ointment in lupus vulgaris, and (4) as a dusting-powder in rodent ulcer.

Atropine for desperate cases of intestinal obstruction has been the subject of much controversy. The general verdict seems to be against its usefulness and with Geberle we are inclined to agree that it is only in the paralytic or spastic form that internal treatment is of use, and even here morphine is preferable. If it has a place, it is only in distinctly inoperable cases.

Yohimbin, in dose of $^1/_{12}$ gr. increased gradually to ⅙ gr., has marked aphrodisiac properties. However, Kranhoff reports that even the minimal dose excites salivation, nausea and even syncope.

The use of formaldehyde by inhalation seems to be increasing and yields good results. Muther claims to have cured seven of fifteen patients. In this he is seconded by Bierwald. Formaldehyde in glycerin (1 to 4 per cent.) does not cause so much irritation and pain when applied to a mucous surface. In ozena, follicular tonsillitis, diphtheria, the angina of scarlet fever, parasitic stomatitis, and tuberculous ulcers, the results have been such as to warrant further use.

Hexamethylentetramin as a urinary antiseptic still is much in vogue. It appears to be superior to salol, ammonium benzoinate, boric acid, guaiacol, napthalin and resorcin. In enteric fever the cystitis is cured and the urine freed from the bacillus of Eberth. It has established its place as the most certain and useful urinary antiseptic and urotropin has come to stay.

Saint-Philippe finds arsenic iodide, five drops after each meal of a 1-per-cent. solution, increased to fifteen or twenty drops, of great value in the bronchitis of strumous children.

Difluor-diphenyl is an ointment of five per cent. (10 parts of vaseline and 85 of lanolin) which thoroughly rubbed into the back, chest and abdomen of children, seems to diminish the number and severity of the paroxysms of whooping-cough.

Sodium cinnamate has received much attention. While some claim good results, testimony is decidedly discordant. As a remedy for pulmonary tuberculosis given intravenously, some report marked success. It has no preventive action on animals infected with virulent bacilli.

Solt makes a sound plea for the routine use of ergotin as a prophylactic and even as a specific against puerperal fever. The dose employed is from one and one-half to three grains.

The depressing effects of methylene blue when administered to patients suffering from nephritis has led to its trial in various forms of mania and paretic dementia by Hughes and Lovelace, who gave it in twenty-two cases. These were nearly all cases of wild excitement when the drug was used, and in all but six it produced a calmative effect which did not resemble the action of hypnotic drugs, but seemed rather a natural quietude; the patients were relieved of excitation, but without dulness. The effect was observed three or four hours after a dose had been given and lasted from fifteen to twenty-four hours. Generally one grain was given, twice daily or oftener, hypodermatically; in the remainder two grains were given in capsule. In only one instance did depression result. Each patient slept well at night, but not during the day. The only unpleasant symptom which could be ascribed to the drug was the vertigo noted in one patient.

Administration by mouth was marked by total absence of all gastro-intestinal derangements. It is possible that a valuable remedy has been discovered for quieting many patients suffering from incurable mental disease in which excitement is a prominent symptom.

Romero paints his patients suffering from smallpox thrice daily with a 1-per-cent. solution of picric acid and 7½-per-cent. alcohol in water. Generally pustules do not form, but if they suppurate he employs an ointment of 2½-per-cent. of picric acid and 2 per cent. of alcohol in hydrous wool fat four times daily. Picric acid is believed to inhibit the growth of the micro-organisms and thus prevent suppuration.

Cushny and Van Naten have found that the effects of caffeine on the dog's heart are (1) an acceleration in the rhythm without further change; (2) a shortening of the movements, commencing in the auricle and spreading to the ventricle, and (3) in large doses auriculo-ventricular arrhythmia terminating in the fibrillary contractions of the auricle and finally in the ventricle. If the action of this be compared with that in the digitalis series it is found that, so far as the direct action on the heart is concerned, they resemble each other, both affecting only the heart muscle. But in the case of digitalis, the earliest changes are seen in the strength of the systole and the extent of the diastole in the ventricle and auricle. These parts of the heart are thus affected sooner than is the excitomotor area and the contrast between the action of the two drugs may be explained by stating that while both act on the heart muscle, the stimulation exercised by caffeine begins in the excitomotor area and descends to the auricle and then to the ventricle, and its effect on the rhythm (so far as these are caused by direct action on the heart) are of secondary importance. Further, the primary changes induced by the digitalis series are not so much evidenced by increased irritability of the parts affected as by increased contractibility and increased dilatation (increased tone), while there is no evidence of such change in the late stages of caffeine-poisoning, in which the ventricle is directly affected.

Martin and O'Brien, from an extensive experience, recommend an ounce of a 3-per-cent. solution of ferrous sulphate, the same quantity of a 5-per-cent. solution of caustic potash, 30 grains of powdered magnesium oxide, a metal receptacle of one pint capacity and a stomach-tube. The two solutions are kept in air-tight tubes which can be broken into the receptacle, the powdered magnesia and half pint of water added, shaken up and administered. This method is preferable to cobalt salts, which are poisonous, and hydrogen dioxide, which is comparatively valueless.

Dupuy has been experimenting with a mixture consisting of from 5 to 20 parts of cocaine, 50 parts of aniline oil and 50 parts of alcohol to produce anesthesia of the tympanic membrane. Tympanotomy and ossiculectomy have been performed painlessly under its influence. Twenty minutes are required for anesthesia. In one instance drowsiness, cyanosis, cold and clammy perspiration, subnormal temperature, rapid pulse and respiration followed its use for persistent earache which was completely relieved. Since aniline has been shown to be extremely toxic, this combination should not be used except for operative purposes, and then as soon as possible after the operation the external auditory canal should be irrigated.

Fliess' views, as to the so-called genital areas in the nose have been confirmed by Schiff. Cocaine applied to the inferior turbinated process relieves hypogastric pain; when applied to the tuberculum septi, lumbar pain ceases. Dysmenorrhea, either nervous or due to disease of the sexual organs, is relieved by applications of the galvanocautery. Mechanical dysmenorrhea (stenosis, anteflexion) is not benefited. A few drops of a 20-per-cent. solution was employed and the results were satisfactory, the possibility of suggestion being removed. The opinion is offered for discussion that this method of applying cocaine may be found to be far preferable to its intraspinal use in lying-in hospitals.

Zomotherapy, the feeding of tuberculous patients with large quantities of raw meat and expressed meat-juice, although highly praised by Richet and Héricourt a few years ago, is believed by Frankel and Soternheim to be overrated. My own experience, based on observations of patients who had been so treated, leads us to condemn unqualifiedly the practice.

Sodium and potassium tellurate in ⅓- to ¼-grain doses appears to be effective in the night-sweats of pulmonary tuberculosis. Its garlic-like odor is objectionable. It will be remembered that to this, as an impurity, is due the peculiar odor after the ingestion of various bismuth compounds.

Bulkley finds that a 2- or 3-per-cent. aqueous solution of potassium permanganate painted on and allowed to dry relieves the itching of eczema.

Phototherapy, to which allusion was made last year, is regarded by Teredde as the best method of treatment for grave forms of lupus erythematosus. Various experiments have been carried out with lights of different compositions. Quite likely something of definite therapeutic value will be formulated within the next few years.

Pilocarpine often causes the vertigo to disappear and improves the hearing in Menière's disease, according to recent observations.

Guaiacol in hydrous wool fat (1 to 2) is of considerable value as an ointment in epididymitis. The cacodylate by injection, according to Barbour, gives lasting and rapid benefit in tuberculosis.

A terpinol from the *Melaleuca viridiflora*, ½ to 2 drams by injection of a 70-per-cent. solution, has given excellent results in whooping-cough. In tuberculosis the same amount by mouth comes quite near to creosote in value.

Erythrol tetranitrate is apparently increasing in favor; aside from the ordinary conditions

favorable for its use, Mattirlo recommends it in lead-poisoning with high arterial tension.

Aaron recommends dram doses of the fluid extract of *Epigea repens* (trailing arbutus or mayflower) for post-prandial gaseous eructations; no explanation of its action has been offered.

Copper as the acetophosphate, in $^1/_6$- to $^1/_3$-grain doses, is an old remedy, recently revived, for the treatment of anemia and chlorosis. Gindicendra reports both an increase in hemoglobin and in red corpuscles.

Hedon finds the acidity of the medicine an obstacle to hemolysis caused by solanin, while its alkalinity favors it. The antihemolytic actions of acid sodium phosphate or sulphate are not specific, for all the free acids and acid substances possess it to some degree. Experimentally it was found that in the rabbit 1.5 cubic centimeter of centinormal hydrochloric acid for 5 drops of rabbit's blood protect this from four to five times the toxic dose. The same properties were proven for all the other acids, even carbonic and such acid amins as asparagin and glycocoll; and the contradictory statements of other authors is due to the fact that they employ insufficient amounts of the acid substances, for with a proper concentration there always will be a modification of the stroma of the globules which renders them impenetrable to the action of solanin. Conversely, the same holds true with alkalies which are fixed and strongly held by the cells. The salts of the blood are not responsible for the slight antihemolytic action which serum exercises toward solanin; they, on the contrary, through their alkalinity, favor it. There is every reason to believe that this effect is due to cholesterin. However, the mixture or combination of the glucosites with cholesterin, while non-toxic toward the red cells and other cellular elements, such as the bronchial epithelium and the epithelium of fishes, preserves all its poisonous properties for the animal as a whole, perhaps because dissociation again occurs, or perhaps because certain cells, as those of the nervous system, again render it toxic.

Of hydrotherapy but little of real advance has been recorded during the past year. One of its devotees has reached the conclusion that "cold water is about the poorest antipyretic"—a fact which has been familiar to therapeutists for some years.

Herter and Richards believe that the observations that intraperitoneal applications of adrenalin were followed by increased amounts of sugar in the urine are explained by the local action of the remedy in the pancreatic cells. A new method of experimentation—direct application of a weak solution to the organ—increased glycosuria. This was not observed when the application of a like solution was made to the liver, kidneys and spleen. If animals had been fed on carbohydrates so that they were on their way from the alimentary tract to the liver, the glycosuria was more marked. The vasomotor action of this substance and increased blood-pressure were experimentally demonstrated to be not responsible for this phenomenon. The real explanation lies in the inability of the cells, under the influence of certain substances, the cyanides among others, to take up oxygen from the blood. Various other reducing substances were tried, sulphurous acid, carbon monoxid, benzyl alcohol, hydroxylamine, ammonium sulphide, piperidine, quinoline and pyridin-like bodies and substances containing them, as adrenalin, produce the same result. If potassium permanganate, chlorine gas of other reducing agents were also used to treat the adrenalin, its application to the pancreas caused no glycosuria effect. Evidently glycosuria and, probably, diabetes depend largely upon the balance between the reducing substances in the blood, some produced in the suprarenal gland, and the oxidation power of certain enzymes, the result of pancreatic cell action. The possibilities of this decidedly new method of research are not to be determined at the present; it is most certainly likely to make real additions to our knowledge.

Quite in line with this is the work of Barnes of Philadelphia, who has contributed some new and important facts to experimental and practical therapeutics. This investigator, working in the pharmacological laboratory of the University of Heidelberg, showed by means of a new convulsion-producing poison (methyl ester-morphoxyl-acetic acid) the exact location of the convulsion center, which was previously unknown. He has also produced two new synthetics which embody material advancements in the treatment of disease. The first of these is an intestinal antiseptic and astringent (hexamethylentetramintannin-protein) which passes through the stomach chemically unaffected and, as proven by both experimental and clinical studies, exerts strong antiseptic and astringent action upon the entire intestinal canal from the duodenum to the rectum. The second of his synthetics is an odorless, non-irritating, non-toxic compound (monoiodi-di-bismuth-methylene-di-cresotinate) which has proven of exceptional value as a dusting powder for surgical use. The feature of this product is that, when brought in contact with wound secretions, it is gradually split up into its components—formaldehyde, iodine, bismuth and cresotinic acid.

In consonance with what was presented on this subject in last year's address, Cushny has reached the following conclusions in regard to the pharmacologic assay: It is a useful substitute for the chemical assay in the case of many remedies in which the latter is not applicable, and it permits the formation of a standard for these preparations which is sufficiently constant and sufficiently exact for therapeutic purposes. It is desirable that such an assay should be made in preparations which fail to effect the desired therapeutic result unless given in quantities which act on important organs, and which are liable to give rise to poisoning if unusually powerful preparations are unknowingly dispensed. This will also be recognized as likely to be of assistance in the line of therapeutic accuracy.

We suggest that while neither the theory is entirely satisfactory nor the practice free from criticism, it is hoped that from its crude presentation something of value may be obtained. Edebohls, from observations upon the results of operations upon a limited number of patients, reaches the following conclusion: From the patient's viewpoint the facts must be recognized that the treatment of chronic Bright's disease by operation forms an entirely new departure; and it will require time, and probably considerable time, before a larger and more definite experience becomes available. In deciding for operation, it must be remembered that renal decapsulation is not directly and forthwith curative of chronic Bright's disease, but that it only leads to a cure or improvement of the disease by establishing circulatory conditions essential to such cure or improvement. The attainment of permanent cure, or of the full measure of improvement possible in a given case, will necessarily require time, during which the patient will, especially in the severer cases, stand in need of the further guidance and treatment of his family physician. The latter will come to regard the operation as one of the measures, albeit the most essential one, necessary to enable him to cope successfully with chronic Bright's disease.

The flood of new synthetics is very sensibly abating, probably because professional credulity has been so overtaxed in the past. Should the report of our Committee on the Bureau of Materia Medica be accepted and the plan put in operation, for the first time in the history of medicine will there be an impartial and at the same time an impersonal report possible and the future of valuable additions to our resources assured. No one who has given this matter thoughtful consideration can fail to be impressed with the urgent necessity for scientific approval or disapproval of substances offered for our use. The plan presented seems to be the only one by which an authoritative verdict can be secured.

The Committee on the Revision of the United States Pharmacopœia has sustained a great loss in the death of our Chairman, Dr. Charles Rice. His accurate and broad technical knowledge, his patient industry and tactful dealing with his colleagues, made the Pharmacopœia of 1890 far superior to that of any other country. Fortunately, one who has been intimately associated with him has been chosen his successor and the work is progressing in a thoroughly satisfactory manner under Professor Remington, who brings to it wide knowledge and untiring energy. When the labors of the Committee are completed the result will be entirely satisfactory to both physician and pharmacist.

In closing this necessarily brief retrospect, I would lay especial emphasis on what is being done by Jones and others in collating the mass of facts and observations grouped together under the head of physical chemistry. It would seem that we are now in a position to take these facts, to generalize upon them to some extent, and to go more thoroughly into the philosophy of the action of substances used in medicine. Just as I have called attention to the importance of the work of Herter and Barnes, so I would emphasize the importance of studying what may be called the third form of matter (atoms and molecules being two), the electrically charged atoms and groups of atoms known as *ions*. The theory of electrolytic dissociation and the underlying doctrine of the ions opens up new methods of investigation and long vistas of not only rational explanation of therapeutic facts, but varied therapeutic possibilities. Protoplasmic movements doubtless take place by means of ions, the electricity-bearing portions into which molecules break down when in solution; and this solution, then, being able to conduct electricity, is called electrolyte. Water seems to cause the best dissociation of molecules into ions, formic acid comes next, then nitric acid, methyl being the superior of ethyl alcohol; acetone, various ethereal salts follow, while the hydrocarbons are of feeble power. When in the presence of galvanic or static electricity certain ions take on a positive charge, they are called cations, while anions are those assuming a negative charge. The cation of acids is hydrogen; the anion of bases is the hydroxyl group (OH). Various theories in regard to nerve impulse and muscle contraction must be rewritten in the light of modern physiology—for example, anesthetics probably prevent nerve conduction by dissolving to some extent the fatty substances prominent in nerve tissue, thus inhibiting the progression which is necessary for conduction. Loeb considers that toxic and antitoxic effects may be due to various alterations in the composition of protoplasm forming living tissue. If a toxin which depends for its activity on a large number of monovalent anions can be controlled by a small number of bivalent anions or even ions of much higher valence (thus requiring a smaller quantity) the question of remedy is apparent. So among antiseptics picric and salicylic acid may be destructive to low forms of life, because they are easily dissociated in the tissue electrolytes and liberate large numbers of poisonous hydrogen cations. Mercuric bichloride and copper cations are for the same reason effective. Ions of high valence are markedly disinfectant; those of lower valence, less so, other characteristics being similar.

Fischer states the same proposition somewhat as follows: Among mercurials the bichloride dissociates more readily when dissolved in water and when so dissociated has the strongest antiseptic action. Since its germicidal action is dependent upon the number of mercury ions in solution, an aqueous is the more efficient solution. The solution is a mercury salt in alcohol—a substance in which no electrolytic dissociation occurs—has no germicidal properties. True had already shown that these statements in regard to alcoholic solutions should be modified by taking into consideration the strength of the solutions. For instance, mercuric chloride dissolved in increasing proportions of ethyl alcohol to water shows

increase of toxicity up to 25 per cent. of alcohol and then a rapidly-decreasing toxicity to 98 per cent. The full statement should be that mercury salts ionize less in alcohol than in water and in strong alcohol solutions not at all. Dissociation may be retarded also by introduction into an aqueous solution, instead of alcohol, another salt dissociating the same anions; for example, calomel treated with increasing proportions of sodium chloride shows a steady decrease of toxicity, the cause being the progressive suppression of the formation of mercury ions. A decrease of toxicity may result even when the cations of the chloride is itself toxic, provided it be less toxic than the mercury ion.

Jones states some of these propositions as follows: (1) With the exception of hydrogen dioxide, water is the strongest ionizer. Next to this comes formic acid. Of the more common solvents, methyl alcohol dissociates to a much greater degree than ethyl alcohol. Indeed, it is true in general that in an homologous series of solvents the lesser members have the greater dissociating power. (2) The dissociating power of a solvent appears to be a function of all the physical or chemical properties of a substance and not of any one. (3) The results of a great many experiments tend to show the chemical inertness of molecules. Most, if not all, chemical reactions are reactions between ions, and molecules as such do not enter into the reactions at all. As the reactions proceed, and the ions already present are used up, the molecules are gradually dissociated and furnish new ions, which then enter into the reaction. The chemistry of atoms and molecules has thus given place to the chemistry of ions.

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THE RENAL COMPLICATIONS OF THE ACUTE DIARRHEAS OF INFANCY.[1]

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THE literature of this subject is decidedly scanty. The text-books on the diseases of children, as a rule, pay it but slight attention. Holt's is the only one which gives any data founded on actual personal observations. Most journal articles are also of little value, as but few of them are based on actual experience. They show great differences of opinion as to the frequency of renal complications in the acute diarrheal diseases of infancy. It is a striking fact, however, that the great majority of those who have written special articles on the subject are convinced of the frequency of these complications. The anatomical conditions in infancy seem favorable, moreover, to their development. There is, as so well stated by Jacobi, "a predisposition to nephritis in the young caused by the fragility of the blood-vessels in the newly-born; by the relative imperviousness of the young renal capillaries compared with the large size of the renal arteries; by the feebleness of the young intestinal muscle, which proves insufficient to expel toxic contents; by the extensiveness and size of the young intestinal blood-vessels and lymphatics, and the large size of the villi, all of which favor the absorption of toxins."

Morbid Anatomy.—The pathological conditions found in the kidneys by various observers agree pretty closely, although there is much difference of opinion as to their frequency and severity. It is difficult to explain the discrepancy in their results, unless it be that some have studied almost entirely the very acute, rapidly-fatal cases, while others have studied those of more varied and less severe types. Generalized congestion is marked in the very acute cases, but is much less so in the subacute and chronic. Thrombosis of the renal veins with hemorrhage has also been found not very infrequently. Degenerative lesions, granular in type, are common. They are most marked in the epithelium of the convoluted tubules. All degrees of degeneration with changes in the nuclei and epithelial desquamation may be found. The tubules contain casts of various sorts and sometimes blood. Similar but less marked changes are found in Henle's loops and in the straight tubules. In cases of the cholera infantum type coagulation necrosis may also occur. Fatty degeneration is unusual and occurs only in the chronic forms. Glomerular changes are rare. Interstitial changes are very unusual, but are sometimes found in the more chronic cases. Foci of round-cell infiltration are also found among the tubules of the cortex or about the glomerular capsules. Micro-organisms are usually not present. That is to say, the alterations in the kidneys in the acute diarrheas of infancy are mainly degenerative in type, show nothing characteristic, and are similar in every way to those found in other infections, both infants and adults.

Etiology.—Felsenthal and Bernhard are inclined to attribute these pathological changes to the circulatory disturbances and the deficient nutrition of the tissues resulting from the concentration of the blood. They admit that toxic absorption cannot be entirely excluded as a cause, but consider that it plays but a subordinate part, except in the cases in which vomiting and diarrhea are slight and death results from toxemia. Almost all other observers, however, attribute them to the absorption of toxic substances from the intestines. In a few cases bacterial infection of the kidneys also plays a part.

Lesné and Merklen endeavored to determine the part played by bacteria in the causation of these conditions and also the nature of the toxic substances. They fed guinea-pigs with the intestinal contents of infants with green diarrhea and with cultures of colon bacilli or mixed cultures of the colon bacilli and streptococci from these cases. They also injected guinea-pigs with filtered cultures of the colon bacillus.

[1] Read at a meeting of the Section on Pediatrics of the New York Academy of Medicine, May 8, 1902.

The pigs fed on the intestinal contents all developed a green diarrhea and died in from twelve to twenty-three days. The urine was scanty and contained albumin. Cultures from the organs and blood were sterile. The kidneys showed general intense injection. The capsular endothelium was proliferated in places. The epithelium of the convoluted tubules was granular and desquamated and the nuclei poorly stained. These epithelial changes were most marked in the pig which lived longest. One of the pigs fed on cultures of the colon bacillus died after two months. It had attacks of diarrhea during the last two weeks with diminution in the amount of urine and slight albuminuria. The kidneys were congested and in places the epithelium of the convoluted tubules showed granular degeneration. The other pig fed on cultures of the colon bacillus as well as the one fed on mixed cultures of the colon bacillus and streptococcus thrived. The pigs injected with filtered cultures of the colon bacillus died in from eleven to twenty-four days. Congestive lesions predominated. The epithelium of the convoluted tubules showed localized granular degeneration. There were also foci of leucocytic infiltration, that is, while the colon bacillus or its toxins caused lesions in the kidneys resembling those found in children dead of enteritis, the ingestion of the intestinal contents produced more marked changes, as well as symptoms very like those of enteritis in infants. They conclude, therefore, that the pathogenesis of the renal affection is a complex one, other factors besides micro-organisms being active. These must be the toxic products of fermentation and alimentary poisons.

To sum up, the pathological changes found in the kidneys are chiefly due to the absorption of various toxic substances from the intestinal canal. They are mainly degenerative in type and are best described as acute degenerative nephritis. They differ in no way from the changes produced by similar substances in other diseases. It is reasonable to suppose that similar changes occur in the great majority, if not in all, of the severe non-fatal cases and in many of the mild cases.

Urine.—The changes which are found in the urine of the autopsied cases are those which would be expected from the pathological lesions. The quantity is more or less diminished in amount and the color and specific gravity are increased. The diminution in the quantity and the concentration are due in part to the dehydration from the diarrhea and the diminished ingestion of liquids. It is often turbid and the urates are almost always increased. Albuminuria is present, but usually not in large amounts. The sediment contains casts, usually hyaline, fine granular or epithelial, but sometimes blood. Degenerated renal cells are numerous, but the blood and blood elements are uncommon. There is an excess of uric acid or uric-acid salts.

Similar changes are found in the urine of cases which recover. They sometimes appear early and sometimes late in the course of the disease. They are more common and more marked in the severe than in the mild cases. Albumin may be found without morphotic elements even after centrifugalization. It is fair to assume that these changes are due to the same pathological conditions in the kidneys as in the fatal cases, namely, acute degenerative nephritis. Very few large series of cases with urinary examination have been reported. Those of Von Hoffsken, Epstein, Le Gendre, Koplik, Zamfiresco, Lesné and Merklen, and Morse are the most important. The results in these series have been very different, urinary changes having been found almost constantly in some and in others being the exception. The most satisfactory explanation of these discrepancies is that the types and severity of the cases studied by the various observers were not the same.

Symptoms.—There are also great differences of opinion as to whether or not these renal and secondary urinary changes produce any characteristic symptoms. Koplik thinks that their symptoms may be divided into two classes, the first being general and inseparable from those of the primary disease, while the second are characteristic. These are restlessness relieved only by periods of stupor, persistent vomiting not relieved by lavage, and slight edema of the anterior surfaces of the thighs, legs and feet. These symptoms he regarded as uremic rather than as toxic in origin. Lensné and Merklen consider characteristic dyspnea for which no cause is found on physical examination. They have also seen myosis. They conclude that edema, dyspnea and myosis are the only clinical signs. In my own cases careful study failed to reveal the slightest relation between the presence of albumin and renal elements in the urine and any symptom or set of symptoms. It seems reasonable to suppose, however, that marked renal changes, even if only degenerative in character, may cause so much disturbance of the renal function as to produce symptoms. It would seem difficult, however, to distinguish the symptoms due to this cause from those due to the general toxemia which produced the degeneration of the kidneys as well as of the other organs.

Prognosis.—Still greater differences of opinion exist as to the prognostic import of the renal and urinary changes. Epstein attaches great importance to them. Henoch thinks that "a complicating nephritis may be the cause of death." Lesné and Merklen think that they must be considered in the immediate prognosis. Koplik feels that in many cases the fatal ending is hastened by the renal complications, but that in general the prognosis is not altered. Holt, on the other hand, states that he has "met at autopsy with but a single case in which there was nephritis marked enough to have seriously diminished the patient's chances of recovery or to have formed an important factor in the fatal result." In my own series the urinary changes were not of bad prognostic import. They were present in mild cases and absent in severe and *vice versa*. A number

of patients in whom the urine showed no changes died.

Acute degenerative nephritis occurs in all the acute infectious diseases. In them it is not a as a rule regarded as of great prognostic import. There seems to be no very evident reason why it should be considered of any more prognostic importance *per se* in the diarrheal diseases of infancy. It is to be regarded, rather, simply as an index in a general way of the toxemia which involves the organism as a whole. In the rare cases in which the urine shows evidence of more serious renal changes, interstitial or glomerular as the case may be, the prognosis is rendered more grave, as it would be in any acute disease complicated by acute nephritis.

The degenerative lesions presumably always end in restitution *ad integrum*. This is probably the usual result in the case of the other lesions. Certain writers think, however, that these nephritides occurring in the course of the diarrheal disease may explain the origin of some of the chronic nephritides appearing in later childhood the pathogenesis of which is so obscure. This supposition seems reasonable. There is no proof, however, either for or against it.

Pyelitis and Pyelonephritis.—Acute pyelitis and pyelonephritis may occur as complications of acute enteric diseases. They are usually of a mild type and are almost always due to infection by the bacillus coli communis. The symptoms are masked by those of the primary disease. They alter the prognosis but little, if at all.

Cystitis.—Acute cystitis is a not infrequent complication of these diseases. It also is almost always of a mild type. It is usually due to the colon bacillus. Infection may occur through the blood, through the rectum, or in little girls directly through the urethra. The symptoms are usually covered by those of the causative disease and the cystitis is unsuspected. It does not affect the prognosis.

Treatment.—The treatment of these complications is to relieve the primary disease, to favor elimination and to avoid further irritation of the kidneys; in short, the usual treatment of such conditions.

Conclusions.—Acute degenerative changes may occur in the kidneys in the acute enteric diseases of infancy, as in other acute infectious and febrile diseases. There is nothing characteristic about these changes. In rare instances proliferative and interstitial changes may develop. The etiology of these conditions is a complex one, including not only micro-organisms and their toxic products, but also the products of intestinal fermentation and alimentary poisons. The urine shows the changes usually found with such pathological conditions in the kidneys. It is doubtful if these renal complications cause any symptoms distinguishable from those due to the general toxemia. Restlessness, persistent vomiting, unexplainable dyspnea, edema and myosis have, however, been attributed to them and considered characteristic. It is probable that *per se*, except in rare instances, they are of little or no prognostic importance. They are to be regarded rather merely as an index of the degree of toxemia. Recovery from these lesions is usually complete. It is possible, however, that in rare instances they may lead to chronic nephritis in later years. Pyelitis, pyelonephritis and cystitis may also develop as complications. They are usually of a mild type. Their symptoms are generally masked by those of the primary disease. They affect the prognosis but little. The treatment of these renal complications is that of such conditions in general.

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THE USE AND ABUSE OF DIGESTIVE FERMENTS.

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THERE is much irrational prescribing of artificial digestive ferments in our time. The cause of it, as far as I can see, is that in the majority of cases in which these substances are prescribed no correct or logical diagnosis of the stomach or intestinal disease has been made. The prescribing of the digestive ferment is simply a random shot at a target labeled "dyspepsia." Among the other causes of the senseless prescribing, especially of pepsin and pancreatin, are the following facts: These substances may now be considered by-products of the large meat-producing syndicates. The stomachs and pancreatic glands of animals, which were formerly thrown away as useless, can be made a source of income to these already gigantic financial concerns, if the doctors can be duped into prescribing plenty of pepsin and pancreatin. Then, again, these products are so extensively and loudly advertised and pushed in all the lay and medical journals, that a busy general practitioner is generally caught off guard and, confiding to the unashamed ex-

aggerations of these advertisements, prescribes these digestive ferments not only in cases in which they are not needed but even in those in which they actually do harm.

These impressions have been gained not simply from lay patients but from personal histories of sick physicians who gave their own account of the treatment with which they had punished themselves. In 1901 I was consulted by nine physicians, four from Baltimore and five from other cities, who were taking HCl and some of them HCl and pepsin when their gastric secretion on repeated analyses was found to contain an excess of HCl and pepsin. In other words, they were suffering from hyperchlorhydria. At the present writing I am treating a physician who has a chronic atrophic gastritis with impaired gastric peristalsis, whose gastric secretion shows no trace of free or combined HCl. Pepsin and rennin are absent, but pepsinogen and renninzymogen are still present. This patient would have been in a logical course of treatment had he perhaps taken the pepsin and HCl mixture; but instead of that he was taking calcined magnesia and bicarbonate of soda, with taka-diastase, a substance which he hardly needed, because the natural ptyalin of the saliva is sufficiently active for amylolysis in the stomach when the gastric acidity is low, for then it has its best opportunity for action.

What ought to be done, instead of spoiling the stomach and making it indolent through lack of exercise by pouring pepsin and HCl into it, is the gradual physiological training to an improved secretion by our physical methods of treatment and by the application of physiological dietetics. We are in a position, in the present light of our knowledge of gastric physiology and pathology, to accomplish this very neatly in the majority of cases. In a general way it can be said that the stomach acts like an indolent school-boy—it will not do by its own inherent powers those things which are done for it. If a stomach secretes less HCl and pepsin than it ought, it is a mistake to give HCl and pepsin as a medicine, for there must be some underlying disease causing the reduction of the secretion, and these substances cannot cure that disease. Worse than this, the stomach very soon adapts itself to the expected dose of ferment; it seems to work less to produce its own ferment; and under such conditions the diseased mucosa generally goes from bad to worse. Here an exact diagnosis and careful analyses of test-meals are necessary.

It would lead me too far to go into the detail of the diagnostic methods. Suffice it to say that some of the gastric diseases, even those that were formerly considered neuroses of secretion, depend upon actually demonstrable histologic changes in the mucosa.[1] Others, however, do not present such changes. In both cases the illogical use of digestive ferments can only do harm. Let us take, for example, the disease known as "hyperchlorhydria," an excessive secretion of gastric juice, of abnormally high percentage of HCl, and containing an abnormally increased amount of the ferments. The ferments pepsin and chymosin or rennin, and the HCl, are the products of different cells in the peptic ducts;[1] but the disease may occur as a simple neurosis, when the autopsy will show no histological changes in the mucosa. It may also occur as a result of hyperplasia of the oxyntic or acid-producing cells of the peptic ducts.[2] In either case the subjective complaints are due to the excess of HCl. There are, however, cases that present all the symptoms of hyperacidity, though the gastric secretion upon analysis shows a perfectly normal degree of acidity. These cases are due to a hyperesthesia of the gastric nerves and I do not refer to them in this discussion. In both types of hyperacidity the administration of ferments is irrational, because too much of these substances is already secreted.

It can safely be stated that whenever free HCl is present in a test-meal, pepsin in sufficient quantities must of necessity be present also. I have recently discovered a case of hyperchlorhydria in which the amount of free HCl was equal to 60, and yet the amount of pepsin seemed to be reduced. A disk of egg-albumin weighing 5 centigrams is digested in four hours by 25 centimeters of gastric filtrate at 40° C.; that is, if the pepsin be present in normal amounts. In this case it took eight hours to digest 5 centigrams of boiled egg-albumin. Now, it might be assumed that pepsin was present in normal amounts, but the great excess of free HCl or other agents present prevented it from exerting its normal proteolytic action. That this was not the case was proven by the following experiment: Twenty-five cubic centimeters of the gastric filtrate containing this excessive amount of HCl were placed in the incubator with a disk of albumin weighing 5½ grams. In a second test-tube 5 decigrams of pure pepsin were added to the same mixture. After three hours the disk of egg-white in the second test-tube was completely dissolved, while the disk in the first test-tube to which no pepsin had been added was not dissolved. I have since examined this patient many times and, though the amount of free HCl fluctuates considerably, there is, as a rule, a reduction in the amount of pepsin secreted when tested in the method first described. I have also tested this gastric juice by Grützner's colorimetric method.[3] Evidently we have here an exceptional case and a somewhat paradoxical one. The patient secretes an excess of HCl, but a reduced amount of pepsin. These cases must be extremely rare, for in a very large number of patients afflicted with neuroses of secretion it is the first one of this kind that I have discovered.

I have gained the impression that it is always best to make the stomach do its own work and

[1] Hemmeter. Diseases of the Stomach, second edition, pp 142-143.

[1] Hemmeter. Diseases of the Stomach, second edition, p. 817.
[2] Hemmeter. Experimental Basis of Dietetic and Medicinal Treatment of Hyperacidity and Gastritis, Jour. Amer. Med. Assoc., Oct. 9, 1897.
[3] Arch. f. d. ges. Physiol., Bd. VIII., S. 542.

not do the work for it. Each cell gains a living by work, and the more it works the better it is nourished and the stronger it grows. Heraclytus used the expression:

πολεμως πατερ παντων

(Strife or work is the father of all).

In the struggle for existence those organisms that do their work best will be classed among the fittest survivors, and similarly the individual cells deprived of work will grow weaker and finally not be able to act at all.

To Fothergill is attributed the saying that digestive ferments are crutches. No doubt many an invalid would prefer walking on crutches than not at all. There are many crutch-walkers, however, who by modern surgery have been enabled to throw the crutches away and walk unaided. Just so with the digestive ferments—they may be used temporarily with apparent success, but the best thing to do is to discover how the patient may be enabled to digest without them.

Pepsin.—There is no lack of pepsin preparations in the market and their digestive powers, as claimed, seemingly have no limit. Certain very popular compositions of pepsin should be emphatically condemned. For instance, all wines of pepsin are inefficient because very little of this ferment is taken up by alcohol. Recently a preparation was brought to our laboratory containing hydrastis, rhubarb, pepsin, and pancreatin in one solution, showing a total disregard for the physiological fact that pepsin acts only in an acid and pancreatin in an alkaline medium. There is rarely any indication for the use of pepsin, for, whenever a test-meal shows free HCl, pepsin of necessity must be present in sufficient amounts; and even when HCl is absent, pepsin or pepsinogen is, as a rule, still present. Assuming a case in which the last vestige of even pepsinogen secretion has been lost, the introduction of the ferment might be of utility; but the enormous quantities of HCl necessary to bring about proper action of this pepsin could not be tolerated by any diseased stomach. And, again, in cases in which pepsinogen is still formed, the addition of HCl simply will suffice to convert it into the complete ferment. Pepsin is prescribed much too often; personally, I have ceased to use it.

Pancreatin.—Although there are many preparations of this ferment and some of them are very active, the substance spoils and loses its digestive power with age. As it is an easy matter to test its amylolytic and tryptic power in artificial digestion experiments, it is wise to do so in all cases in which much dependence is placed on its action. It can be obtained in a liquid form as well as in the form of a dry powder, from extraction of the pancreatic gland of animals. This ferment is completely destroyed in the gastric juice. This is why thinking practitioners should not use both pepsin and pancreatin together in the same solution, because the medium in which one must act is opposed to that of the other. In the majority of cases in which pancreatin is given empirically, HCl is still secreted in the stomach and the ferment is destroyed. It has been suggested by Unna that the pancreatin be inclosed in keratin capsules. Keratin is unaffected by gastric juice, but readily dissolves, it is claimed, in alkaline media. Hence the pancreatin may pass through gastric digestion and at its completion pass into the intestine, where the coating is supposedly dissolved and the ferment acts upon the chyle. But this idea is not supported by experiment nor by exact indications of the conditions for the employment of pancreatin. Keratin will not dissolve in the duodenum except very slowly; pills coated therewith are found in the stools during normal digestion. There is no necessity for attempting to supply the ferment directly to the duodenum, since in the great majority of cases (perhaps all, except when malignant neoplasm, cirrhosis, or abscess has destroyed the gland) there is plenty of pancreatic juice in that part of the bowel. In exceedingly rare cases pancreatic calculi and diseased states of adjacent parts may cause stenosis of the duct. In all these attempts it is overlooked that the reaction of the normal duodenum is acid and will not permit the solution of keratin.

There is but one distinct indication for the use of pancreatin and that is permanent deficiency or complete absence of HCl and enzyme-formation of the stomach. Experiment and experience have conclusively shown that when pancreatic digestion is started in the stomach in these cases by giving the pancreatin with sodium bicarbonate there is more exhaustive utilization of the proteids and carbohydrates. I have frequently assured myself of this fact by analyzing the stools after weighed amounts of these food-substances had been ingested, at the same time making identical analyses with the same amounts of proteid and carbohydrate, but with pepsin and hydrochloric acid as an artificial digestant; with the latter more food-substances passed through undigested than when pancreatin was used.

Pepsin and HCl naturally suggest themselves in atrophic gastritis, but judging from observations pancreatin is preferable. I have noted patients in whom there was a remarkable hypersensitiveness to HCl even in doses of six drops of the dilute form, so that its use had to be dispensed with. The dose of pancreatin is from four to eight grains, together with the same amount of sodium bicarbonate in form of compressed tablets; of these, two to four are taken fifteen minutes after meals.

Pankreon.—This is the latest addition to the articles of ferments. It is a gray, odorless powder, the taste of which is not unpleasant. At a temperature of 40° C., it is capable of digesting 83 per cent. of 100 grams of egg-albumin in fifteen minutes. One gram or 15 grains of pankreon is capable of doing this amount of proteolysis. The advantage that this new preparation possesses consists in its resistance to HCl of the gastric juice, by which ordinary pancreatin preparations are destroyed in about one and a half

hours. This preparation is of advantage in cases of achylia gastrica and chronic atrophic gastritis and intestinal atrophy. If examination of the stools shown that a considerable portion of the ingesta passed through undigested, a trial with pankreon is rational, especially if examination of the stools thereafter give evidence of a better digestion.

This should be the chief guiding line for the rational employment of all agents designed to aid the digestive process, *viz.*, careful examination of the stools. If possible, the maladies should be treated without any ferment whatsoever and this will be possible in the great majority of cases. But if the practitioner wish to assure himself as to whether the administered digestive ferment is efficacious let him examine the stools with the Boas stool-sieve before and after the use of the agent. My experience is that in the majority of cases the ferment *per se* cannot effect a very appreciable change in the amount of food digested.

Cases of gastric atrophy and achylia gastrica in which the formation of all the gastric ferments is lost, in my experience, never go hand in hand with total loss of the pancreatic ferments. It is only in the rare combinations of intestinal with gastric atrophy that the use of such a ferment as pankreon seems rational. But we have no right to judge exclusively on theoretical grounds. The amount of food digested and absorbed, over and beyond that which is digested when the ferment is not taken, is the only reliable criterion.

A NEW METHOD OF TREATING THE MORPHINE AND ALCOHOL HABITS.

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SOME months ago I received a letter from Dr. Lott, of Cameron, Texas, stating that he was using massive doses of hyoscine in the treatment of various forms of drug habit with very great success, and asking if I could give any information in regard to what was to him a purely empirical plan of treatment. I asked him to write a paper on the subject, which he did and which was published in the *Therapeutic Gazette* for February, 1902. Since then I have tried the plan in six cases with extraordinary results from the following points of view: First, the patients can take massive doses for days at a time, as much as ¼ grain each day hypodermatically, with no evil effects on any vital function. Second, they suffer very slightly, if at all, from the immediate withdrawal of the morphine, and third, and more surprising, the desire for the drug is largely, if not entirely, dissipated after a few days.

The first case in which I tried this plan was a man of about thirty years of age, who had employed morphine for a long time and who took about twelve grains of the drug by the mouth in each twenty-four hours. It seemed absolutely impossible to break up the habit and his mental condition was rapidly becoming exceedingly bad. The patient was put in the charge of a trained nurse and, under the care of his regular medical attendant, received large doses of hyoscine every hour by hypodermic injection.

The only noteworthy symptoms were the rapid development of the effects which are so characteristic of all the so-called belladonna series. The pupils became widely dilated, the tongue exceedingly dry, and the patient's condition that of a mild, wandering, delirium, accompanied by a certain amount of carphologia and visions of various objects in different portions of the room. These objects, as a rule, were not disagreeable in their character, although on one or two occasions delusions of persecution developed. In this particular case the large doses of hyoscine were continued for a period of over two weeks and then were gradually decreased. At no time were the symptoms which he developed really alarming, although the apathetic condition at one time seemed to demand careful consideration. I have seen this patient's physician during the last few days and he tells me that not only is the man not taking morphine, but that he seems to be improving in every way, has gained ten or twelve pounds in weight, and has not returned to the opiate. Both the patient and his physician consider that the treatment had been very successful It is now several months since the treatment ceased.

The second patient was a woman who came under my care suffering from chronic gastro-intestinal catarrh with griping pain for which she had been in the habit of taking morphine for a long time. In this patient also the administration of hyoscine hypodermically, in massive doses, failed to produce any effects which I considered in any way dangerous, but after a few days she decided that she did not care to continue the treatment any longer and passed from my observation. The third patient also passed from my observation before a sufficient time had elapsed to produce a cure. In her instance the morphine habit had been developed owing to the administration of the drug for the relief of pain which depended upon a chronic rheumatoid arthritis. Naturally, the administration of hyoscine did not relieve the arthritic pains of this disease, but she developed all the symptoms of mild hyoscine-poisoning, but she was able to get along without her morphine, so far as any symptoms of collapse such as usually follow its abrupt withdrawal were concerned. She also decided that in view of the condition of her joints she preferred to continue the use of the drug, and she, too, passed from my control, so that I cannot report this case as a one of cure of the habit, but simply as another which fortifies my belief that the administration of these large doses of hyoscine is entirely safe.

The fourth patient was admitted to my service at the Jefferson Medical College Hospital suffering from acute malarial infection, and soon after his admission we discovered he was

a morphine habitué. Quinine was administered and the chills stopped. After this was done hyoscine was given in massive doses by means of the hypodermic needle and the characteristic symptoms of wandering delirium with some picking of the bedclothes speedily developed, the morphine being stopped at once. The patient's condition remained excellent so far as his heart and respirations were concerned. When I entered the ward he was attentive to my approach and carried on a perfectly lucid conversation with me in which he expressed himself as feeling very well, but as soon as my back was turned so that his attention was not fixed, his mild delirium began again and the handling of the bedclothes returned.

It is a noteworthy fact that all the patients subjected to this method of treatment that I have seen have expressed themselves as feeling well, when asked questions about their own sensations, and had no serious disorder of the heart or other organs. It is also a noteworthy fact that in some of them the dryness of the tongue passed away after the first twenty-four or forty-eight hours, so that they had not suffered at all from this symptom. While as a rule they do not care to take solid food, I have never had any difficulty in getting them to take liquids in adequate quantities, both for the purpose of flushing the kidneys and giving liquid nourishment.

In still another case, a comparatively young woman who for a number of months had taken ⅓ of a grain of morphine hypodermically every three hours, and at least a pint of whisky in each twenty-four hours, was also given very large doses of hyoscine. For a period of three days hyoscine delirium with mental wandering was very marked, and she says that for those three days she had very little recollection of what took place. Within ten days of the beginning of the treatment, no morphine or alcohol at all having been given, the patient while still receiving these massive doses of hyoscine began to pass from under their influence, her tongue became moist, her mind clear and she herself expressed surprise that she no longer had any desire for either morphine or whisky. Twelve days after the treatment began she asked for solid food and on the thirteenth day complained to me that her appetite was ravenous and that she could not remember when she had had such an insatiable desire for food. During the last four days of these twelve, her mental condition was exceedingly bright and cheerful and she is now progressing rapidly toward what I hope will be a permanent cure. In her case morphine had not been taken for the relief of pain, but in gradually-increased quantities for the relief of nervousness.

Those of us who have seen the suffering of morphine-habitués suddenly deprived of the drug cannot fail to be impressed with the extraordinary ease with which morphine can be withdrawn from such patients when they are receiving hyoscine. The last case that I have mentioned, in which the patient was not only a morphine-habitué, but also an alcohol-habitué, seems to me of extraordinary interest. As I said at the beginning of this note it seems to me very extraordinary that a patient can take such massive doses of hyoscine without developing serious symptoms, that he can be deprived of such large quantities of morphine without passing into collapse, and that all alcohol and morphine can be withdrawn simultaneously and at once without the development of evil symptoms. Dr. Lott certainly deserves a very large amount of credit for his courage in having carried out this plan of treatment, which has given me such good results in a few cases that I shall have no hesitation in applying it in others. While the few cases in which I have tried it do not justify me in reporting this method of treatment as universally applicable, the remarkable results so far obtained and the importance of this subject seem to justify this preliminary contribution to the subject, since Dr. Lott's statement that the method can be used in drug habits other than the morphine habit seems to be endorsed by my own results.

THE COMPARATIVE PHYSIOLOGY OF FAITH CURES.

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IF the press is to be believed, we are still in an age of miracles. Hardly a day passes without the chronicling of a "supernatural" cure. A man is healed of palsy by the earnest prayer of his pastor; blindness goes under the magic touch of a peripatetic prophet; malignant tumors melt like snow before the burning glance of a mind practitioner. Varying with the ingenuity of the exponent of a new method of universal healing, or with the genius of the herald of a new creed, the following is numbered by hundreds or by thousands. In this there is nothing new. It can safely be said that never, since its beginning, has society been without its foolish beliefs and its contagious delusions. They have always swept over countries as they now sweep the world. Many writers have recently shown that these will-o'-the wisps after which crowds jostle to-day are the same in character and admit of the same interpretation as those that agitated simpler people in earlier times; and striking analogies have been drawn between our own spiritualists, faith curists, mental scientists, Christian scientists, and the thousand and one similar cults and movements of the past. Prototypes of the psychopathic epidemics of modern times were particularly numerous during the Middle Ages.

The crusades were meaningless and purposeless crazes. The children's crusade, especially, demonstrated the absolute insanity lurking in such movements. In those centuries eastern countries were overrun with Messiahs and divine messengers. A fair type of these, and perhaps the most dramatic, was Zabbataih-Zevi, who lived in the latter part of the seventeenth century. Without directly announcing that he was the Son of God, he impressed the followers who rapidly gathered around him with the belief that

he was, and they so proclaimed him. The sect grew with amazing rapidity. Its prophet preached an inflammatory doctrine of emotionalism and free love, and his fame extended rapidly from Asia Minor into northern Europe. In Germany and Holland many Jews sold their property to join the new Redeemer and march with him to Jerusalem. He ended his days in obscurity, but the sect he founded even to-day has scattered followers called Zabbatians.

The dancing manias and the flagellants, while different in detail from the creed of Zabbataih, brought out the same suggestibility, the same contagion, the same crowd movement as characterized the followers of the false Messiah. In demonophobia, or the fear of demons, and in the persecution of witches, history furnishes us evidences of the barbarous cruelty to which man is subjected when common sense leaves him and emotionalism wields him. Martin Luther said that all witches should be killed; James the First justified such action by royal enactment, and the history of the Massachusetts Colony shows all too well how the minds of the Puritans could be swayed when their superstition and fanaticism were appealed to. From such psychopathic epidemics our own differ in form, but they are the same in kind. A Coxey's army marches over us; a Mrs. Nation finds some to follow; a new religion, almost in a single night, dots the land with its artistic tabernacles; but with advancing civilization the contagion has lost most of its dangerous qualities. It would not now be possible for frenzied children to traverse a country on their way to find the Holy Sepulcher. Civilization has largely eliminated cruelty and persecution. In civilized countries to-day believers in the most bizarre religions or professors of the most magic arts need not fear the stake. The spirit of the times is shown in our contagious delusions by the practical method and purpose which characterize them all. The credulous public to-day looks for the prophet who comes bearing gifts—who can cure disease or bring happiness to the mind. Yet the same psychological principle underlies the unreasoning crowd movements of all times. It is the tendency, which some men's minds have at all times and which all men's minds have when acted upon in collections, for impulse to take the reins from the hands of reflection and for imaginatiion to run away with reason.

Since early times philosophers and theologians have maintained that there were two spirits in a man, one working for evil, the other for good, an idea of which poets and novelists have made free use. For this theory modern psychology has established a foundation that many old-time sayings might envy; for with slight changes the subconscious self corresponds with the evil spirit, and the higher or conscious self, the higher personality, with the spirit which works for good. In a normal, well-developed man, we see the subconscious infrequently; in a hysterical girl, on the other hand, it reigns. It would be beyond the scope of this paper to describe in detail how psychology studied these two selves. Suffice to say that by hypnotism many persons can be deprived of their higher controlling consciousness and can be reduced to automatic beings, deprived of self-control and governed in their actions by the person who has induced the hypnosis. Similarly, after certain diseases, the higher personality is deposed and the patients live for longer or shorter periods of time in a trance-like state in which their conduct and action differ materially from the conduct and action which, previously to their misfortune, gave them personal individuality. In both cases personality or consciousness is said to be split up or divided, the higher half having been pushed aside, the lower or subconscious half having full control of the individual, and the individual himself is said to be subconscious.

From the study of such cases psychology has given the following characteristics of the two selves: The higher is attentive, reasons, analyzes, criticizes, acts with purpose rather than from impulse; in it memory is active and accurate. The secondary self is antithetical to this; in it attention is unstable; the ideas leading to conclusions are disconnected; the conelusions which lead to action are arrived at by impulse rather than by reason; deliberation is well in the background, credulity well in the fore. The subconscious self is devoid of originality, its reaction to external stimuli being essentially automatic and traveling the paths of least resistance. Both these selves are present in every man; according as one or the other is in control, the character of the individual is proclaimed. With the first we have the rational, thinking man, deliberate and independent in action, representing the highest degree of mental stability, while persons dominated by the subconscious are credulous, easily influenced and easily led. The summation of their psychological characteristics is feeble-mindedness. Many of this class, through unstable attention, chaotic and slow flow of ideas, and faulty memory, are feeble-minded in all directions. Some, apart from one dominant suggestion, have ordinary intelligence, a few have intelligence above the ordinary, while a still smaller number achieve material success. But with the subconscious self well in the foreground there can be no such thing as genius, as extreme suggestibility implies a servility and submission entirely inconsistent with the soaring independence of genius. A brilliant enthusiast, even though he leads an insane following, may well fulfil the qualifications of genius; but such a one acts independently of others, and is of totally different stuff from those he leads. No genius would follow him. In persons dominated by the subconscious, in those who are morbidly emotional, irreflective and illogical, suggestions however unreasonable may have effects of long duration. Led by a gifted fanatic, such persons may proceed to almost any length of absurd or insane behavior.

Thus are founded creeds without reason and movements without purpose. The consistent fol-

lowing of such movements implies a considerable amount of unoccupied time on the part of the followers. In them, consequently, the laboring classes are little heard of. It is rather in the leisure and semi-leisure classes that adherents are found who not only have time to spare but who, from their very inactivity, are the more ready to listen and to follow. In this connection it is impossible to avoid the observation (without, however, the disrespect implied in the associations of classes) that women and invalids are conspicuous by their numbers. For occupation is vital to the maintenance of an intellectual standard, and discontent and vain imaginings are the handmaids of idleness. It would seem that education should put a bar to such movements, and so, in general, it does. Education, with the implied brain development, has entirely changed their character from the times of the crusades and of the burning of witches. But a certain degree of general education is not inconsistent with feeble-mindedness and some of the followers of such movements pass for, and doubtless are, well-educated people. Are they insane? In the delirium of a moment, in the temporary wild enthusiasm of a crowd, they may be regarded as such by those who wish to stretch the definition of insanity. Doubtless, also, the percentage of the insane among them is high. But the belief in a new creed, however preposterous, or in the efficacy of a dramatic healer, does not in itself constitute insanity. I take it that a man cannot be both a Baptist and a Roman Catholic. Yet the Baptist regards the beliefs of Catholicism as absolute delusions, and the Catholic could hardly imagine himself as embracing the Baptist creed without precedent mental unhingement.

The followers of these movements are universally regarded as sincere in their convictions. Not so the leaders, who rarely escape the imputations of imposters, charlatans, hot on the dollar hunt. Such a view may be grossly erroneous. That advertising quacks, money-making spirit-rappers and divine healers with business managers and press-agents, conform comfortably to such a category, few will question. But in the leader of a well-organized movement there is a dash of genius which implies a belief in himself and in his pretensions. It would be difficult to explain the simple Schlatter attracting and swaying thousands by his eccentric personality unless he believed of himself what the crowd believed of him. Neither, if some trickery be detected, is the cry of "all fraud" necessarily justified. Madame Blavatsky was detected in the most barefaced imposture, but I am none the less willing to accord to her my conviction that fundamentally she believed the tenets of the cult she nurtured, although she employed artificial and silly methods to win to her the doubting and the unconverted.

Psychology classifies the individuals just described as abnormally suggestible and as persons in whom the subconscious is unduly prominent. It is now pertinent to inquire what the subconscious means from the standpoint of biology; in what class of living beings its operations are most evident; what its prominence indicates from the point of view of evolution of the brain. To these questions biology and comparative physiology give suggestive answers.

The study of vital phenomena is a study of reflexes. Life implies that from a certain irritation there results a certain response. In plants the purely reflex character of life is simple of demonstration and unquestioned. The opening of the flower under the influence of light, the closing of the Venus fly-trap on the insect that invades it, the tendency of certain plants to incline toward the sun as they grow, all demonstrate the reflex of protoplasm contracting as a result of peripheral irritation. The common tendencies of certain plants to react in a definite way to stimulation are called tropisms. In low animal forms, also, tropisms are evident as purely reflex acts. But as we proceed upward in the animal scale, the purely reflex character of behavior is more difficult of proof. In the higher animals and in man the simple reflexes are easy of demonstration—*e.g.*, involuntary winking; but it is not so easy to resolve a complex act such as the wagging of a dog's tail into all the component reflex parts of which it may be composed. Yet evidence is accumulating to the effect that most, if not all, of the complicated acts of the lower animals, and many of the complicated acts of man, are merely the combinations of movements which result from mechanical or chemical changes in protoplasm brought about by peripheral stimulations. Loeb ("Physiology of the Brain," Putnams, 1900) has made very interesting experiments along this line, some of which I may cite. They are all to the effect that what are commonly regarded as the instincts of animals are not instincts in the sense that they result from memory or volition on the part of the animal; but that they are a series of reflexes which affect the animal's whole organism, and which are performed quite independently of volition or consciousness; that when an animal is said to do a thing by instinct, it is in reality forced to do it by chemical or mechanical causes acting on its protoplasm and over which it has no control. Loeb believes, for example, that the migrations of animals are not due to instincts, but to the irritabilities of certain peripheral structures and of the connection of the same with the muscles. He cites the periodic depth of migration of pelagic animals. A great many of these animals begin a vertical upward migration toward the surface of the ocean in the evening, while in the morning they migrate downward. It is a remarkable fact that these forms never go below a depth of four hundred meters, which fact suggests that light is the controlling power in these depth migrations; water absorbs the light, and the thicker the layer of water the more the light is absorbed. In experiments on the larvæ of Balanus perforatus, which were known to make periodic depth migrations, Loeb found that these animals were positively heliotropic (that is, they moved toward

the light) to a weak light and negatively heliotropic (moved away from the light) to a strong light. Thus the animals when near the surface of the ocean in the strong light are negatively heliotropic and are forced downward; as the light of day passes and weakens, they become positively heliotropic and by evening have again been forced to the surface. The classical instinct of the moth to fly into the flame is generally supposed to be the attraction of the moth by the light and that its flying into it is an act of volition. As a matter of fact, it is forced into the flame; light striking on the wings of a moth produces some chemical effect on the muscles which causes them to contract, and as a result of this contraction the moth is impelled forward. If the light be thrown on the wing of one side only, that wing only moves, and as a result the moth is rotated until the light affects both wings, and then both wings contract and the insect is forced forward toward the light. Other insects may be subjected to similar influences, but in them the rate of speed is such that in approaching the light they receive new stimuli, and diverge from it. But the rate of speed of the flying moth is such that he is fairly in the light before the stimuli to divert him have time to act. An experiment with a variety of butterfly known as the amphipyra is also in point. The amphipyra is a running butterfly and is characterized by its tendency to crawl into cracks and crevices. It has been believed that this tendency was a purposeful one, in that is would protect the insect from danger. To show that this instinct is purely reflex and without purpose, Loeb undertook the following experiment. He placed a number of amphipyræ in a box, on the bottom of which he put some little glass blocks so cut that a butterfly could be sheltered beneath each one. He then covered the box with a cover in two pieces, one of which was translucent and the other opaque. The insects gathered themselves just as much on the side of the box on which the light shown as on the dark side. It is evident therefrom that amphipyræ owe their tendency to crawl into cracks, not to an instinct of preservation, but to the reflex demand that their bodies should be everywhere in contact with a surface. Had it been an instinct of self-preservation, the butterflies in the experiment would have gathered on the dark side, but, as they did not, it is quite evident that their actions in this respect are due to some reflex need of their bodies to be in contact with surfaces and not to preconcerted instinct.

It may seem a long step from the tropisms of these low forms to the conduct of a man, and the analogist who would link too closely together the forced movements of plants and animals with the apparent voluntary acts of human beings might well find himself in error. Yet, to a certain degree, the analogy is incontestable. The respiration, the secretions, the beating of the heart, and the vegetative functions in general are performed independently of higher brain development, are essentially automatic, and can be explained only on the hypothesis of a pure reflex mechanism depending solely for its action upon peripheral stimulation. As we get further away from the purely and evidently material and near the world of mind, the analogy has more breaks in it and the proposition is more difficult of demonstration. But even here man has his tropisms, his inclinations which compel him to action independently of reason or will, his forced movements. The following example shows what complex, coordinated and apparently voluntary acts may occur, while the agent is completely automatic so far as the acts are concerned. It has occurred to me more than once. I start to walk down Fifth Avenue. Though my destination is the west side of the avenue I start from the east side and continue on the east side in walking. I suddenly become conscious long before reaching the destination that I am crossing over to the west side. I have often in crossing stopped to ask myself the reason for crossing in that particular place. On looking back, I would find that a building was going up on the east side of the avenue, or that a platform had been erected over the sidewalk, or that there was some such impediment to pedestrians. But I had acted entirely unconsciously and until I looked back to see was not conscious that the west side offered a better route than the one I had been on. Of course I had seen the obstruction; but the visual stimuli had delivered their message and my muscles had responded in a purely reflex way without my knowledge or control. I did not choose to cross the street, but was forced across without being consulted. Man then, too, like the moth and the butterfly, has his tropisms. He is less dominated by them, however, than are the animals, for it cannot be said that every man under identical external conditions will act in the same way; but it can be said that of ten thousand men under such conditions a certain number will give the same reaction to the same stimuli. Thus, while animals in this sense can be classed *en masse*, man can be so classed only in percentages—a straw showing which way the current of progress is running. He is none the less dominated by them. One of the most evident psychological tropisms in man is to be attracted to what is unusual or unknown; the individual may resist it, but in crowds it is hardly to be overcome. After an accident on the street, people rush to the scene. They cannot hope to gain thereby, they do not expect to do good, they run the risk of seeing something unpleasant, but they go because they cannot help themselves. It cannot strictly be said that they go—they are forced. Man's upward course in development removes him farther and farther from forced movements; its goal is freedom of will. The nearer the goal, the less we see of involuntary tropism. Conversely, the farther from the goal of intellectual perfection, the more evident and dominant the tropisms become, and the more does man's brain in its action resemble the brain of lower forms.

The course of my thesis has been to show that what the psychologist calls subconscious action is for the biologist a tropism; both terms indicate automatism unguided by intellectual control. No man is so perfected as to be free from it, but when it becomes the dominant expression of nervous activity, when a civilized human being in his automatism remains the puppet of inane suggestion, persistently deaf to the higher callings of reason and reflection, he represents the mental state we suppose man to have had when the gap between him and animals was still narrow. He shows that in the process of brain elaboration he has been passed over. He stands a speaking record of the past.

That imperfect developmental forms, of which such a man is a type, should be numerous is entirely consistent with all known facts of evolution. Consequently, our proposition is not disproved because a magic healer draws multitudes in his train, nor because an illogical creed numbers its adherents by hundreds of thousands. Certainly, these deluded enthusiasts are sufficiently numerous to constitute an interesting, if not a serious, social problem: less serious, and with more good points than in the centuries of cruelty and oppression, for to-day certain cults, such as Christian science, doubtless work much good in the class to which they appeal. But the question even to-day is prominent and important. It can be properly met only when the people whom it concerns are understood and an appropriate place in the anthropological scale is assigned to them.

What should be society's attitude toward them? If they are defectives and under the supremacy of a fixed delusion, anyone with the most superficial knowledge of psychiatry will readily see that to argue with them is worse than useless. In fact, argument is impossible, for with them exact terms have no meaning and the syllogism does not exist. If they were amenable to reason, they would not be what they are. Philippics from the pulpit and denunciations from medical societies do not reach the audiences for which they are intended. Further, suggestibility grows fat on notoriety, and opposition is a term easily transformed into oppression, upon which all organized movements flourish. It is as useless in stemming such movements as a picket-fence would be in checking a herd of frenzied cattle. Common sense dictates that the greatest possible latitude be given them. The forbidding of meetings, the annoyance by the police, and similar measures such as the Emperor has instituted against the Christian scientists in Berlin are ill advised and are certain to defeat the object in view. Followers of such movements are far better left to work out their annihilation by themselves. Crazes of all kinds are self-limited and self-destructive. As the herd of frightened horses becomes separated, as the individual animals become fatigued, the stampede is over. So it is in human emotional movements. Internal dissensions occur, the unstable attention of the followers wanes, and a new emotionalism, better adapted to the times, is substituted for the original. The many subdivisions and the many rivals of spiritualism have pushed that particular epidemic from the public eye. With the exposure of the trickery of the talented Madame Blavatsky, the theosophist cult ceased as an important movement. So it must be with them all; they must come, they must flourish, but just as surely they must pass away. While they flourish the one reasonable and effective check for them is legislative and it need be applied only when they threaten public safety and public health. This is a danger which, in our day, is much less serious than most alarmists would have us believe.

MEDICAL PROGRESS.

PHYSIOLOGY.

The Nature of Pepsin.—The veil of mystery which has enshrouded the subject of enzymotic processes in the human body is beginning to fall beneath the hands of careful investigators. That the pepsin usually obtained from the gastric juice and mucous membrane of various animals is not the essential enzyme, but contains this mixed with a number of impurities, is conclusively shown by the latest researches of C. A. PEKELHARING (Hoppe-Seyler's Ztft. f. Physiol. Chemie, Mch. 20, 1902). In spite of laborious investigation he did not succeed in obtaining from the gastric mucous membrane a proteolytic enzyme of constant composition. In hundreds of preparations obtained from pigs' stomachs, which preparations had been submitted to repeated processes of purification, it was found that the nitrogen and hydrogen content were in each case respectively constant, whereas the carbon and particularly the phosphorus content were subject to variation, which indicated the presence of impurities. The longer the process of purification was carried out, the smaller was the proportion of phosphorus obtained. He was even able to obtain a pepsin that was phosphorus-free. The author does not deny the possibility that pepsin occurs in the gastric-juice in combination with lecithin, nevertheless he asserts that the activity of the enzyme is independent of the existence of lecithin or of any other phosphorus-containing substance. It was discovered that the mucus with which preparations of gastric juice were contaminated contained a proteid of which phosphorus is one of the constituents. The author agrees with Friedenthal that the proteid body precipitated from solutions of pepsin by heat contains a carbohydrate as well as a pentose molecule. Pekelharing was able to study to better advantage a substance obtained from the mass precipitated by heat, which substance possesses the properties of an acid, soluble in water on the careful addition of an alkali. For this substance the author proposes the name "pepsin-acid," and has learned to recognize it as one of the splitting-products of pepsin. This body belongs to the class of proteids corresponding with other members of this class, both in the nature and the respective proportions of its constituents, and differing from the entire mass precipitated from solutions of pepsin by heat only in respect to the proportion of sulphur. Pepsin prepared from the gastric mucous membrane of the pig and that prepared from the gastric juice of the dog may be placed in the same category. The differences between them may be ascribed to the difficulty with which pepsin is extracted from the mucous membrane in its pure form. Both varieties

are, like all the other proteids, levorotatory, but there is no relation between the amount of rotation of the plane of light and the reaction of the solution. According to the author, the fact that the substance obtained from the mucous membrane possesses sufficient purity for a proteid body, indicates that this exceptionally active pepsin is the enzyme *per se*, and does not owe its digestive power to the presence of associated bodies. In the first place, the activity of pepsin is destroyed by heat and at the same temperature as that at which albumin is coagulated. In the second place, as soon as gastric juice is deprived of its albuminous constituent through semi-saturation with ammonium sulphate, it loses its zymotic power. Moreover, the presence of ammonium sulphate is to a large degree inhibitory to the activity of pepsin. It has previously been shown by the author, and later by Nencki and Sieber, that it is possible to prepare active solutions of pepsin that do not give the reactions for proteid bodies; this fact, according to the author, does not negate the idea that pepsin is an albuminous body. The observers just mentioned have advanced certain facts in favor of the proposition that it is possible for the same molecule to display diverse zymotic activities. Without adding anything to this contention, the author inclines to the view of Fisher, as presented in the following metaphor: There are keys constructed in the form of a ring to which are attached side-branches, each one of which fits a different lock. Let any one or more of these attachments be bent or in any other way incapacitated, the remaining branches will nevertheless retain their peculiar property.

The History of Uric Acid Introduced into the Organism.—Of eminent value in all future studies on the pathogenesis of the uric-acid diathesis and gout, is the determination of the effect of the administration of uric acid either by mouth or subcutaneously. It has been generally accepted by physiological chemists that this substance, when artificially administered, disappears as such in the system and reappears in the urine under the form of urea. Some observers have found an increased output of uric acid following its introduction into the alimentary canal, attributing this either to the direct elimination of the unchanged acid, or at least to an indirect increase caused by the leucocytosis following the administration of this agent. To determine whether circulating uric acid is eliminated as such or is transformed into urea, was the object of a research by F. SOETBEER and J. IBRAHIM (Hoppe-Seyler's Zeitschrift. f. physiol. Chemie, Mch. 20, 1902). In the case of uric acid introduced by the mouth, they found that the greater part of it is not absorbed in the alimentary canal; that its presence here causes no changes in metabolism, neither an increased nitrogen elimination nor an augmented production of uric acid. They reached the conclusion that the history of uric acid in the organism can not be studied by watching the effects of its ingestion by the mouth, but that it is necessary to study the effects wrought by the subcutaneous administration of this agent. One of the authors was the subject of the research. After twenty-one days of careful feeding, so as to bring him into nitrogenous equilibrium, a solution containing a mixture of piperazin and uric acid was injected into the cellular tissue of the abdomen. Analysis of the urine showed on the day of the experiment a considerable increase of uric acid, the excess representing 80 per cent. of the uric acid administered. On the following day, when no uric acid was administered, the surplus of this substance in the urine continued, there being eliminated a little over 18 per cent. of the drug previously administered. The excess of uric acid on these two days represented practically all of this substance that had been injected. This was, however, not the only result, for on the three succeeding days there was a continuance of the surplus of uric acid in the urine. This latter fact showed that pathological changes occurred in the organism, which manifested themselves in causing a nitrogenous elimination amounting to 3 grams above the normal. Fever did not accompany this manifestation. The authors draw the following conclusions from their observations: (1) Circulating uric acid is eliminated as such and not as urea; (2) it seems to act as a poison to the tissues, causing an increased production and consequent elimination of uric acid. Whether or not increased leucocytosis occurs in the course of these changes, the authors have not determined. They conclude that their researches afford a new perspective of those diseases accompanied by an increased uric-acid content of the blood, this increase causing by its toxic effects on the tissues a still greater production of uric acid, a "circulus vitiosus" being created. The original increase of this substance may be due to resistance to its elimination, as in nephritis, or certain other unknown factors may come into play, as in gout.

Function of Ferments in the Blood.—The rôle which blood ferments play in intracellular digestion is fully considered by A. C. CROFTAN (Jour. Amer. Med. Assoc., May 3, 1902). In reviewing the origin and final destination of such ferments, his experiments show a close connection between them and living protoplasm even in its most "vital" properties. If 0.01 gram of pepsin be dissolved in 95 c.c. of a 2.75-per-cent.-solution of HCl and 5 grams of fibrin or egg-albumin are added, the latter will be digested in twenty-four hours and the fluid will become clear. If 10 c.c. of this solution be mixed with 85 c.c. of the HCl solution, and 5 grams of fibrin be added, this, too, will become clear. This process can be repeated and not until the tenth time will retardation be observed. If the same dilution of pepsin be made without adding fibrin, no solution of fibrin occurs after a dilution of about 1 to 30,000 is reached. The process resembles a regeneration of pepsin by contact with fibrin—a growth in a suitable medium, *i.e.*, in the absence of a pabulum no growth occurs. The author thinks that this observation carries one a step forward into the borderland that lies between dead and living protoplasm.

Roentgen Rays in Pulmonary Disease.—The value of this agent in the diagnosis of pulmonary lesions depends on the corroboration by the other physical methods of examination, according to A. ABRAMS (Jour. Am. Med. Assoc., May 3, 1902). In the normal lung shadows are usually cast in the apical regions by the muscles of the shoulders, also by certain atelectatic zones due to the incomplete filling of the thoracic cage by the lung. Any lung not distended to its complete physiological capacity offers an obstacle to the transmission of the X-ray and consequently casts a shadow which may be attributed to the presence of pulmonary disease. The necessity of completely filling the lung by forced inspiration or other means before X-ray examination is evident. From an investigation of lung affections, the author found that the majority, if demonstrable by the rays, throw shadows on the screen. The anatomical condition can be interpreted only to a limited degree. Fluid in the pleural cavity or in a tuberculous lung casts more pronounced shadows than a thickened pleura, lung abscess, or bronchopneumonic patch. A lung shadow gives the impression of density and is circumscribed, whereas a thickened pleura yields a less dense and more diffuse shadow. Shadows limited to the center of the lung are not pleurogenic. In

focal diagnosis it may be said that the shadow cast in expiration will not differ materially in position or clearness, if the lesion be situated near the screen; if it be distant from the screen, the shadows will be greater and their contours indistinct.

The Transplantation of the Adrenals.—Of great interest is the possibility of transplanting tissues in warm-blooded animals from one part of the body to another. The limitations to which investigations in this field are subject, particularly in the field of the transplantation of parenchymatous organs, have not yet been determined. V. SCHMIEDEN (Pflüger's Archiv f. Physiol., Apr. 5, 1902) has succeeded in transplanting portions of the adrenal glands of dogs to various parts of the same animal experimented upon. The work of Strehl and Weiss, undertaken with reference to preventing death in animals deprived of their suprarenal capsules, by means of portions of suprarenal gland transplanted to other localities, had not succeeded. These investigators sewed both organs in their entirety to the abdominal parieties, sometimes placed them free in the peritoneal cavity, in both cases without success. The same result attended the transplantation of slices of the adrenals. Schmieden states that he has operated with various modifications upon dogs, and transplanted the adrenals as quickly as possible after extirpation. In no case was the entire gland removed, but always slices as large as one-fourth of the organ were transplanted. While small portions placed in the kidney became united to this organ without delay, and were found after six months unchanged both in their macroscopical and microscopical appearance, the author found that in the case of larger portions, particularly when placed in the peritoneal cavity, there resulted a central necrosis, although the peripheral zone remained alive. These results corresponded in every way with those obtained by Von Eiselberg and Enderlen in the transplantation of pieces of the thyroid gland. The fact that certain transplanted portions of the adrenals failed to unite with the surrounding tissues, the author attributes largely to faulty technic. He proposes to repeat these experiments and also to try to graft portions of suprarenal gland from one animal to another, which he has not yet succeeded in doing.

The Temperature-curve in Health.—The rhythmic daily variations observed in the bodily temperature during health are no less significant than those observed during the progress of various diseases. The rhythm to which many physiological processes are subject, as is observed in the case of the respiration and the heart-beat, the consumption of oxygen, the elaboration of carbonic acid and urine, and the general working capacity, is similar to that which is observed in the case of the bodily temperature. According to F. G. BENEDICT and J. F. SNELL (Pflüger's Archiv f. Physiol., Apr. 5, 1902), the question as to what factors influence the body temperature has hitherto been only partly answered. In a long series of observations covering many months, the object of which was to discover the normal temperature fluctuations that occur under different circumstances, and particularly the effect of the reversal of the customary daily routine of activity and sleep, the authors reach the following conclusions: The normal temperature curves of the different individuals experimented upon showed the usual rhythmic changes. The curve of the temperatures taken in the axilla is, considered as a whole, parallel to that of the temperatures taken in the rectum, yet there are fluctuations of the latter of 0.38° above the former and below it of 0.06°. Muscular activity causes a rapid rise in the temperature-curve, which continues as long as the work lasts. Different kinds of work of the same intensity occasion the same rise in temperature. Discontinuance of work is soon followed by a distinct long-continuing fall in the temperature. During the nights following days of severe muscular exertion, the temperature was constantly lower than during the nights succeeding days of rest. The chief influence of fasting consists in the fact that the range of the variation of the curve is diminished. Fasting following severe exertion caused a diminution in the daily temperature variation amounting to 0.6°. The average temperature for a day of fasting following a day of rest was no different from that of the normal daily average, while in the case of a day of fasting following one of hard work, the average temperature was about 1° less. When work was performed during the night, followed by rest and sleep during the day, which conditions were imposed for a period of ten days in a series of experiments, no appreciable tendency to a reversal of the temperature-curve was observed.

The Bile and Saponification.—As ordinarily stated in the text-books, the formation of soaps in the small intestine is brought about by the union of the alkalies of the bile with the fatty acids produced by the splitting-up of the fats. The conditions under which saponification occurs and the determination of the relative quantities of fatty acids and of soaps found in biliary mixtures are discussed by E. PFLÜGER (Pflüger's Archiv f. Physiol., Apr. 5, 1902). In a series of experiments the author has shown that bile in the presence of sodium carbonate and at a temperature of 37° C., is able to bring about the solution of a considerable quantity of fatty acids. This solution can not be accomplished without the presence of bile. His researches seemed to indicate that the solutions contained, besides soaps, considerable quantities of fatty acids in a free form. A general review of his last researches indicated that of the fatty acids dissolved in bile mixtures, only the smaller portion, at most 45 per cent., is dissolved through saponification. The author claims to have established the following conclusion, namely, that strictly speaking no freely dissolved fatty acids occur in bile mixtures, but that the former are present in a loosely combined state. It is remarkable, from both the physiological and the chemical standpoint, that the fatty acids form soluble acid salts, although there is present in the bile enough alkali to form neutral salts. The reason for this is the fact that the carbonic acid contained in the sodium carbonate of the bile has a greater affinity for the sodium than have the fatty acids, the neutral salts of which bind more readily a second molecule of fatty acid, although in a loose form. These significant facts make one understand why the transformation of the fatty acids into a soluble form requires one-half as much alkali as has been deemed necessary. The newer researches of Pflüger show that the quantity of saponified fatty acids surpasses that of the freely dissolved fatty acids. Accordingly the provision has been made for the complete binding of all fatty acids by means of the neutral soaps, which are thus transformed into acid salts. The secret of the physiological significance of the bile in promoting the absorption of fats is to be found in the fact that the cholates dissolve the fatty acids, holding them in loose combination, and thus enable them to react with the sodium carbonate and the already formed neutral soaps. The cholates themselves undergoing no decomposition, a small portion of them have the power to bring about the transportation of a large quantity of fatty acids into neutral and acid salts. Pflüger showed by his investigations that the greatest quantity of fats that can at any time be absorbed can by means of the bile be made soluble in water. Since the action of the bile consists

in the formation of neutral and acid soaps, the soluble form of the fats is the first to be taken into account from the standpoint of absorption; the latter can be accomplished without the intervention of bile, but since the bile increases to a great degree the solubility of soaps, its presence in the jejunum and ileum augments the absorption of the soaps that occur there. It is probably in the epithelial cells that the soaps are retransformed into fatty acids and alkali, the former becoming neutral fat, and the latter being taken up by the blood-vessels as sodium carbonate. Thus to the blood is restored the alkali that it has delivered into the intestine for the purposes of saponification. The discovery by J. P. Pawlow that the stimulation of the intestinal mucous membrane with acids causes an abundant flow of alkaline pancreatic juice, furnishes a wonderful example of the self-regulating mechanism serving the needs of saponification. Moreover, fat itself is a powerful stimulus of the intestinal mucosa, whereby larger quantities of pancreatic juice, rich in steapsin, are secreted; and it is the opinion of Pawlow that fat exercises this power even in a neutral medium. This same investigator seeks the significance of this intimate relationship between acid stimulation and the pancreatic flow, in the fact that the alkali of the pancreatic juice inhibits the action of pepsin, favors the splitting action of the pancreatic enzymes, and restores the normal alkalescence of the blood. According to Pflüger, the excess of acids in the intestine produces a deficiency in the alkalies and consequently inhibits saponification, which, according to the author's law of self-regulation, excites the flow of richly alkaline pancreatic juice.

Peptonizing Ferments as Factors in Vital Development.—The most advanced physiological teaching of the day asserts that the most intimate and hitherto mysterious processes that lie at the basis of growth, development and decay, in other words, the entire vital cycle, are bound up with the activity of the enzymes that reside in the protoplasmic cell. The solution of this problem of the zymotic control of life phenomena can not be gained by the study of the complex animal organism, but recourse must be had to the simple unicellular animal or to the plant. Such elementary biological inquiries as are being so diligently prosecuted at the present day can not fail to be of far-reaching importance in the field of practical medicine. In this respect one welcomes the contribution of T. BOKORNY (Pflüger's Archiv f. Physiol., Apr. 5, 1902) in answer to the following question: "Do sprouting seeds contain peptonizing or other proteolytic enzymes?" In sprouting seeds the albuminous content is quickly dissolved and decomposed. This process begins with the simple swelling of the seeds. Since the proteid granules of the resting seed are during the process of sprouting dissolved and rendered capable of transportation to other parts of the growing plant, there must be some chemical transformation that brings this about. One would naturally think of the formation of peptone, which is easily capable of osmosis, and of the simple amido-bodies, such as asparagin, leucin, tyrosin, etc. Both transformations of albuminous bodies are known. They can be produced chemically by means of heating with dilute acids, or physiologically by means of proteolytic enzymes. Asparagin and the other amido-bodies have already been found in sprouting seeds; they have not been discovered in resting seeds. The question is whether these amido-bodies are the product of zymotic activity or are the result of the customary protoplasmic processes. Have true peptones been found in sprouting seeds? They have not been discovered in resting seeds, in this respect resembling the amido-bodies. The author succeeded in isolating albumoses in many sprouting seeds, the origin of which he attributes to the action of an enzyme on the globulins of the proteid granules. The attempts to isolate this enzyme have given many contradictory results. Nevertheless, it has been distinctly proved that in the process of brewing malt a definite peptonization goes on.

Influence of Alcohol on Metabolism in Fever.—As with most others, careful analyses have proved to A. OTT (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4) that alcohol in fever prevents proteid dissolution to about the same degree as an isodynamic quantity of carbohydrates. The conclusions to be drawn are that, though alcohol should not be thus employed as food, no contraindications exist as to its use in fever in moderation, and especially in the chronic fevers of pulmonary diseases its general stimulation is but desirable.

OBSTETRICS AND GYNECOLOGY.

Uterus Bipartitus.—An unusual case of twin pregnancy in a bipartate uterus is reported by C. W. DOUGHTIE (Phil. Med. Jour., Apr. 19, 1902). It is interesting to note, first, that the uterus was divided by a septum which extended as low as the os and divided the uterus into two compartments, each of which contained a fetus (at the fifth month), a cord and placenta enveloped by its bag of waters; second, that three twin pregnancies had occurred, each of which had resulted in abortion or miscarriage.

Sarcoma of the Uterine Cavity.—This condition is not so rare as it is generally supposed to be. This is because it is macroscopically confounded with myoma and fibromyoma and a great number of these tumors are taken out by hysterectomy and cast aside as such, without the formality of a microscopical examination. According to A. MARIEN and O. NORMANDIN (Gazette de Gynéc., Mch. 15, 1902), sarcoma of the uterine cavity is more rare than epithelioma and more rare than the other varieties of uterine cancer which occur as a result of the degeneration of fibromyomata just before or during menopause. These tumors may also be mistaken for hydatidiform mole when pregnancy coexists. Such being the case, the diagnosis from the clinical standpoint is often rendered somewhat difficult.

Living Embryotomy.—Destruction of the fetus after its death is usual enough under well-known circumstances. Occasionally, however, the child's life must be sacrificed in the interests of the mother. G. ZANDER (Ctlblt. f. Gyn., 1902, No. 14) gives the following as the usual indications: A narrow pelvis causing deviation of the head of the child or danger of rupture of the bladder; extensive plastic operations in the vagina resulting in high-grade scar tissues, and narrowing of its lumen; unusually severe labor pains which drive one shoulder instead of the head deep into the vagina; excessive tonic contraction of the lower uterine segment in badly-nourished and muscularly-weak women, resulting in a very little progress toward delivery, although the uterine muscles may be intensely active; the certainty or likelihood from other signs that after a few more pains or a further delay the child will die and the mother probably suffer; the open question of prognosis for the mother after a Cesarian section, which may or may not save the child and is far more likely to destroy the mother. In all these cases Zander claims embryotomy is the only rational interference. Practically, all of its various methods are reducible to separation of the head or its equivalent. Fritsch and Mermann alone recommend another procedure. Turning their attention to the other pole of the child, Fritsch divides completely the rump with Siebold's shears, while Mermann does a complete evisceration, finding that after it the extraction of the child

is very easy. In all cases in which embryotomy is necessary there exists a very narrow pelvis with the child arrested high up in the canal, or an abnormal transverse position with the baby low down in the vagina. Under either circumstance evisceration is technically not difficult and possible within a few minutes. With Siebold's shears one or two ribs are divided, the finger inserted, and the incision enlarged according to the indications. After this all the organs of the chest and abdomen are quickly removed. The amount of space which is thus gained is amazing. The next step consists in one or more of the following details: With the body doubled upon itself, the delivery is completed by slight traction with the fingers. The hand is introduced into the abdomen of the child in order to bring down the pelvis; a foot may be delivered if easily within reach, but has as little warrant as it would have after perforation of the head; decapitation is sometimes necessary with Braun's hook, and will be found far more easy after than before evisceration; the spinal column may be divided according to Fritsch and the baby delivered in halves. The selection of any of these special procedures rests upon technical ease and the interests of the mother and varies with individual cases. If after evisceration space be still lacking, it is probably because the operation has not been done thoroughly. All operators complain of the technical difficulty of decapitation unless an evisceration is done first. It must finally be remembered that this terrible destruction of the child rests entirely upon the question whether or not it will die in a short time, or whether or not by delay the chances of the mother progressively decrease.

Vaginal Hysterectomy for Early Cancer.—One can hope for a favorable result after such an operation provided the disease be confined to the cervix or to the cervix and the mucous membrane of the upper portion of the vagina, or to the cervix, the mucous membrane of the upper portion of the vagina, and, perhaps, to a part of the endometrium. The uterus should be perfectly movable and there should be no glandular involvement, nor any infiltration under the mucous membrane of the vagina. Such cases operated upon at once by vaginal hysterectomy yield gratifying results, says J. F. JANVRIN (Amer. Jour. Obst. & Dis. Women & Children, May, 1902). In all cases in which the disease has extended beyond these mentioned limitations, the combined abdominovaginal method is the one to be preferred.

Hydatid Cysts and Dystocia.—Literature contains references to thirty-seven cases in which hydatid cysts have been the cause of dystocia, thirteen cases being reported in France and nine in Germany, says J. FRANTA (Annales de Gynéc. et d'Obst., Mch., 1902). The condition seems to be more common in multiparæ. The number and size of the cysts vary. They may be situated in the cul-de-sac of Douglas, in the cellular tissue of the pelvis, on either side of the uterus, between the rectum and vagina, between the vagina and the bladder, in the broad ligaments, and in the sacrum. They have also been found in the superior ilio-mesenteric region and in the neighborhood of the liver. These latter, though distant from the pelvis, may be so dragged down that they materially interfere with the progress of labor. The cysts may be so compressible that labor may be ended without their rupture; or labor may only be completed by operative procedures which have for their end the evacuation of the contents of the cysts. In fifty-one cases in which the deliveries were both spontaneous and operative, the mortality for the child was over fifty per cent. The various operations that have been employed have been forceps craniotomy, version and Cesarian section. Three such cases have been reported and in all of them the women died. Two of these were performed before the days of antisepsis. Multiple cysts have shown a maternal mortality of 50 per cent., while single cysts give but 15.8 per cent. mortality.

Blood-examination in Female Genital Disease.—In the diagnosis of female genital affections, the determination of the presence of pus is in many cases so important that all therapy and prognosis may rest upon it. The ordinary diagnostic aids, namely, history, temperature-curve, exploratory aspiration, etc., are not reliable and leave one too frequently in doubt. Curshmann, in 1901, pointed out the relation as characteristic between the white blood-cells and inflammatory processes in or about the cecum and appendix, and emphasized their great importance as a means of diagnosis. He has subsequently been supported in these contentions by other observers, such as Rieder, Von Limbeck, Grawitz and Cabot. MAX DUETZMANN (Ctlblt. f. Gyn., 1902, No. 14) has recently been making similar observations and records concerning the reaction of the white blood-cells in purulent inflammations in the genital apparatus of woman, seeking to establish it as a diagnostic aid in gynecology. His results are briefly as follows: Whenever there was an exudate, especially with pus or abscess formation, the great increase in the number of white blood-cells always preceded or accompanied the actual appearance of pus. Furthermore, after evacuation of such accumulations of pus, the number of white blood-cells always decreased, provided the drainage was perfect. In cases in which the process was extending, the white blood-cell count was also ordinarily a good guide. His observations showed the full value of blood-examinations. Operation revealed the presence of pus even when from the symptoms it seemed unlikely that it would be found. Examples of this are furnished by cases in which streptococci were present and in which there was comparatively little systemic reaction, as is so often the case, although the danger to the patient was very great. He promises to publish, at no late date, a minute and extensive report of all these observations. They certainly concur with the examinations in surgery and their findings which have been from time to time published within the last one or two years.

A New Operation for Retrodisplacement.—The present operations for this condition, such as Alexander's, hysterorrhaphy, ventrosuspension, are considered transitional by J. M. BALDY (Amer. Jour. Obst., & Dis. Women & Children, May, 1902), so he has devised the following operation to meet all the requirements of the condition. The round ligament on each side of the uterus is picked up and a ligature is thrown about it close to the uterus, so placed as to secure the artery The round ligaments are then severed close to the ligatures. This leaves the uterine ends of the ligaments free and bleeding. The hemorrhage is controlled by a fine ligature applied to each bleeding vessel, or by the sutures which fasten them in the next step of the operation. A pair of forceps is then made to perforate the broad ligament from its posterior aspect (at the point at which the round ligament is cut on the anterior surface), and the cut end (the pelvic end) of the round ligament is grasped in the bite of the forceps and pulled through the hole in the broad ligament (made by the forceps in perforating) until it protrudes on the posterior side of the broad ligament. The opposite side is treated in a similar manner. The cut ends of the round ligaments are then attached to the posterior aspect of the uterus at the cornea, directly back of the original site of the attachment of the round ligaments on the anterior aspect of the uterus. The point of at-

tachment may be higher or lower than this, as may be necessary to accomplish the desired result. As much of the round ligaments may be cut off as is necessary to produce the proper position of the uterus. Thus the uterus remains a pelvic organ and has no artificial supports. It is free to expand in pregnancy and there are no adhesions to give future trouble from pain or possible strangulation of the bowels.

Prolapsus Uteri in Nulliparæ.—A conservative estimate will place the frequency of prolapse of the uterus and vagina in nulliparæ at about one per cent. of all cases of reported prolapse, says H. D. BEYEA (Amer. Jour. Obst. & Dis. of Women & Children, May, 1902). Severe physical effort, kyphosis, dysentery, frequent vomiting, coughing, tuberculosis, and excessive venery are given as some of the rarer causes of the condition. More commonly its subjective etiology is chiefly dependent upon, first, poor health, physical weakness and general tissue relaxation; and, second, frequently upon want of development of the uterus and its support. The exciting causes are laborious occupations and great physical effort, which actively increase the intra-abdominal pressure. The cure must naturally depend upon the general health of the patient and upon the performance of such plastic and abdominal operations as shall positively restore the equilibrium of the uterus and fix the prolapsed structures in natural position.

Kuestner's Incision.—There are numerous methods of entering the abdominal cavity which have for their aim an avoidance of visible scar and of hernia. R. VON FELLENBERG (Ctlblt. f. Gyn., 1902, No. 15) calls attention to the method of Kuestner. The details in outline are as follows: Just above the mons veneris, where the pubic hair is normally present, a long, horizontal incision, convex downward, is made through the skin and superficial fascia down to the deep fascia. The upper and lower margins of the wound are then liberated from the sheaths of the recti, except in the middle line, where the attachment is apt to be more dense and which may be left or divided with the knife. Then through the side which is over the most obvious part of the disease, the abdomen is opened vertically in the usual manner. Fellenberg's records include a large variety of cases and show this incision to be as good as any other in all respects and better than most in that after it is healed and the hair has grown again over the region, the scar is hidden either by the hair or by the fold in abdominal fat or by both.

The Transverse Incision of Phannenstiel.—Similar to the incision of Kuestner is that of Phannenstiel, described with its results by B. DANIEL (Ctlblt. f. Gyn., 1902, No. 15). It is made in the same manner and in the same region as is that of Kuestner, but the sheath of the rectus muscle is divided transversely, while the muscle fibers of the peritoneum are also cut vertically. It will, therefore, be seen that in this method the incision through that all-important structure, the anterior sheath of the rectus, lies at right angles to that through the rest of the opening into the abdominal cavity. Therefore, only at their point of intersection could hernia take place. The results of the operation are exceedingly flattering and its cosmetic advantages obvious, while its adaptability is wide. It is not, however, suitable in pus cases, because it is very difficult to establish drainage.

The Undeveloped Uterus.—Arrest of development of the uterus may occur during intra-uterine life, during infancy, or at the age of puberty, says C. L. BONIFIELD (Amer. Jour. Obst. & Dis. Women & Children, May, 1902). The cause of the arrest of development is not known. The ovaries frequently share in the lack of development. Sterility usually exists. The pubescent uterus is usually the result of chlorosis, incipient tuberculosis, and typhoid fever. Sharp anteflexion is almost always present. No effect on sexual desire or power of gratification has been observed. Dysmenorrhea is a marked symptom and is of the obstructive type. This usually leads to a chronic congestion which in time leads to hypertrophy and profuse irregular menstruation, so that it is at this period that the patient comes to the gynecologist and the enlarged uterus often causes him to mistake the real condition. The anteflexion may change to a retroflexion. Unfortunately, nothing can be done when the condition once exists. If the dysmenorrhea be extreme and does not yield to treatment, removal of the ovaries is a perfectly justifiable procedure. The condition is a rare one, but the percentage would be materially lowered by proper hygiene at the age of puberty.

Co-existing Extra- and Intra-uterine Pregnancy.—Of all the complications to which the pregnant woman is exposed ectopic gestation is perhaps the least frequent. Only 88 such cases have been reported since the year 1708. No pathological condition can be especially charged with the occurrence of this condition. The diagnosis is extremely difficult and has rarely been made before rupture of the ectopic sac, abortion or delivery at term of the uterine fetus, laparotomy or autopsy. The duration is variable, both pregnancies are generally interrupted, the one by abortion or premature labor, the other by rupture of the sac or death of the embryo. There are cases on record in which both were developed to term and both children were born alive. The prognosis is grave for the mother as well as for both children. E. G. ZINKE (Amer. Jour. Obst. & Dis. Women & Children, May, 1902) believes that the treatment will have to be expectant and the patient kept quiet if the diagnosis be made before any of the aforementioned accidents take place.

NEUROLOGY.

Changes Following Removal of the Temporal Lobe.—The rare opportunity of examining the brain of a patient from whom almost the entire temporal lobe had been removed and who died three months later of recurrent melanosarcoma, was afforded to LEDINGER (Deutsch. Arch. f. klin. Med., Vol. 73.) The results showed that all symptoms following so extreme an ablation could be traced to other and secondarily softened or injured parts of the brain and none to the absence of the temporal lobe itself. Before the operation there was, besides general pressure symptoms, a crossed paresis of the lower facial. After the operation there was also a paresis with slight disturbances of sensibility in the left arm and leg which disappeared gradually, so that at the time of discharge from the hospital there remained only a weakness of the extensors of the foot and hand and a slight difficulty in walking. No disturbance of speech existed nor was the musical sense or the power to understand words impaired. The paresis mentioned could be explained by a secondary softening of the frontal part of the internal capsule. A slight disturbance of vision was caused by injury of the optic nerve.

Laryngeal Paralysis of Lobe.—The origin of laryngeal paralysis as it occurs in locomotor ataxia is given by A. CAHN (Deutsch. Arch. f. klin. Med., Vol. 73) as follows: (1) In the large majority of cases there are changes in the peripheral nerve in the form of degeneration of either the intramuscular nerve elements or of the recurrent nerve itself, or of this and the vagus-trunk in the neck, or up to and even into the medulla, with, however, normal central nuclei. (2) In but few cases the nuclei were diseased and in

one the nucleus ambiguus showed changes. Even in these, however, the peripheral nerve degeneration was present and was more pronounced than the nuclear changes. Clinically the cases of pure neuritis showed a median position of the vocal cords; in the others, however, there may be uni- or bilateral cadaver position, or median position or disturbance of sensibility. All these paralyses are either stationary or progressive in character and prove a certain predilection of the luetic poison for the larynx.

Relation Between Internal and External Form of the Skull.—Contrary to the generally-accepted opinion, G. SCHWALBE (Deutsch. Arch. f. klin. Med., Vol. 73) thinks that to a considerable extent the character of the surface of the brain can be ascertained from the external surface of the skull, particularly on those parts covered with muscle. Four cerebral convolutions of the temporal region form distinct external prominences. Without the use of artificial lines or measurements it is possible by means of palpation to determine the development of different parts of the brain and even of individual convolutions. For the development of craniocerebral topography, this observation is of the greatest importance.

"Dope" in India.—The sensitive, high-strung Hindu, so far in advance of Europeans psychically, naturally falls an easy prey to the various narcotics. Cannabis indica, as is well known, produces in the marvelously refined nervous economy of the Indian ecstatic dreams of a type which cannot be awakened in the clumsy mechanism of the Occidental. KAILAS CHUNDER BOSE (Brit. Med. Jour., Apr. 26, 1902) reports a sad series of such cases, most of which had a fatal termination. Cocaine, which has but recently been introduced in India, has taken very largely the place of the less harmful gauja or alcohol or bhaug. Unlike these, it requires but a simple preparation. It is generally taken in the form of powder sprinkled on a paste of slaked lime which is buttered on a betel leaf (Pan, Piper betle). The mass is rolled up and chewed for about fifteen minutes. The first symptom of the so-called hilarity is a heaviness of the head. Then quickly follow a wild throbbing of the arteries of the neck and palpitation of the heart. The pulse never exceeds 110. The inebriate wishes to be left alone; he will not speak lest saliva escapes from the mouth. The ears become hot, the cheeks pale, the nose pinched and cold. The height of intoxication is marked by coldness of the finger-tips and dilatation of the pupils. This stage lasts from thirty to forty-five minutes, when the victim longs for a fresh dose. The teeth and tongue of old habitués turn absolutely black. The craving for an increased dose is pronounced. In one case it was so marked as to cause a jump from gr. i to gr. xij in a month. The worst sequelæ are very obstinate forms of diarrhea and dyspepsia. Of the mental derangements, hallucinations and delusions causing dejection and fear are common. A more miserable object than a confirmed Hindu cocaine-eater cannot be pictured. The drug is altogether more disastrous in its effects than is opium or any other narcotic used in India. To quote the words of a victim, "To eat cocaine is to court misery." It has none of the joys of opium and is infinitely more destructive.

Central Innervation of the Larynx.—The experiments of A. ONODI (Wien. klin. Rundsch., Apr. 20, 1902) show that destruction of the center of phonation in the cortex does not influence phonation, and likewise that destruction of the thalamus opticus, corpus striatum or lentiform nucleus or division of the brain at the level of the anterior quadrigeminal bodies, or lesions of the cerebellum do not destroy the voice. Severing the medulla above the region of the vagus nuclei, however, will at once render the act of phonation impossible, and it seems that the centers are situated in a region upon the floor of the fourth ventricle, extending from twelve millimeters behind the posterior quadrigeminal bodies up to the beginning of the centers of the vagus. In all phonating infants examined in which the skull was perforated to permit delivery this region was intact.

Korsakoff's Disease.—The psychic syndrome present in certain cases of multiple neuritis was, according to S. SOUKHANOFF (Jour. de Nevrologie, Apr. 5, 1902), first described by the late Prof. Korsakoff. One of the most marked symptoms is failure of memory. This amnesia manifests itself mainly in regard to events of recent occurrence in the life of the patient. The disease can be caused by the following etiological factors: Alcoholism, typhoid fever, influenza, pyemia, icterus, etc. These diseases inhibit the secretory activity of the ductless glands, the internal secretions of which tend to maintain the nutritive centers. When this nutritive equilibrium is disturbed, certain nervous and psychical manifestations appear.

Unusual Localization of Lead Paralysis.—A peculiar case of lead-poisoning was observed by G. KOSTER (Münch. med. Woch., Apr. 15, 1902) in which, after previous colics and arthralgias, the first symptom of paralysis, instead of being the typical extensor weakness, showed itself symmetrically in the lower extremities. While it is true that cases in which the legs were primarily and chiefly involved have been described before, these have all been of the peroneal type; here, however, only the interossei and the abductor hallucis were involved, leading to great depressions between the toes, flattening of the inner edge of the feet and a general claw-like attitude. Two diseases had to be considered in the differential diagnosis, *i. e.*, the neural type of muscular atrophy and chronic anterior poliomyelitis. The former begins generally about puberty and may occur in other members of the family, while the history and the stationary character militate against the latter. A distinct reaction of degeneration could be obtained in the affected muscles.

HYGIENE.

Quarantine of Vessels from Yellow Fever Ports.—In a reply to an article upon this subject by Drs. Reed and Carroll, published in the Medical Record, E. SOUCHON (Med. Rec., Feb. 8, 1902) takes exception to several of the rules laid down by them. They have divided all ports from which vessels come into infected and non-infected ports and then place no restrictions upon vessels from the latter. Dr. Souchon believes that reliance cannot be placed upon the authorities of many of the seaport towns along the Gulf and hence the liability of cases being overlooked or not reported is very great. He also cites several cases in which the disease developed much later than the time specified for detention by Drs. Reed and Carroll.

Are Vessels Infected with Yellow Fever?—In a recent paper by Dr. Doty, the Quarantine Officer of the Port of New York, it was stated that, while cases of this disease contracted ashore develop aboard ship, none are contracted aboard the vessel itself. H. R. CARTER (Med. Rec., Mch. 22, 1902) has had considerable experience at Southern ports and instances several cases in which patients had been undoubtedly infected after leaving port, for the period of incubation is generally admitted to be not more than from six to eight days and probably never exceeds six and one-half days. The number of infected vessels has been much diminished and since 1893 they rarely reach Southern ports. The diminution is due mainly to the sanitary measures for avoiding exposure to infection in the foreign port

and to the substitution of steamships for sailing vessels. It seems to be proven, however, that infected mosquitoes may exist in hidden or unfrequented parts of the ship and communicate the disease to passengers or to crew after they have been out several days. It is in general necessary to disinfect all vessels running between Southern ports of the United States and tropical ports if a case of yellow fever occur aboard, no matter where it be contracted.

Death-rate in Porto Rico.—When the utter lack of sanitary precautions is taken into consideration, it is indeed wonderful that there is not even a greater death-rate among the inhabitants of this newly-acquired possession of the United States. It is said that if it were not naturally one of the most healthy sites on the globe, all the people would long since have been dead from some epidemic or other. P. R. EGAN (N. Y. Med. Jour., Apr. 12, 1902) shows that there is no attempt at any sanitary precautions except in one city and this is very slight. There are 143 huts along the stream from which Ponce receives its water-supply and all the inhabitants dispose of their excreta directly into the river. A most superficial investigation easily explained the cause of the typhoid epidemic last year. The two great causes of death, however, are anemia and tuberculosis, the former being twice as common as the latter. The ankylostoma has been thought by some to be the efficient cause of the anemia, since it is found in nearly every case investigated, but examinations frequently disclose its presence in the stools of the strong and healthy. The writer suggests that the limited variety of foodstuffs upon which the inhabitants subsist may better acount for this blood condition. At least, further investigation is necessary to determine the relationship between the food and these intestinal parasites the eggs of which are omnipresent in the water of the island.

DERMATOLOGY.

Herpes Zoster.—Zona has been ranked successively among cutaneous, infectious and nervous maladies, says DEBOVE (Med. Press and Circular, Apr. 9, 1902). The malady may commence with the eruption to be followed later by the pain. In some cases there may be prodromal symptoms, such as malaise, shivering or vomiting. Neuralgic pain persists after zona has disappeared and may constitute a very serious complication. Facial paralysis may complicate herpes of some of the cranial nerves and the paralysis may persist after the eruption has disappeared. Brissaud has reported three cases of ophthalmic zona followed by hemiplegia on the opposite side, and Raymond has also published a certain number of cases of facial paralysis. There is no absolutely necessary connection between the seat of the eruption and the distribution of the paralysis, as the latter may affect the facial nerve and the zona may be due to affection of the superficial cervical plexus. Those who consider zona an infectious disease say that the paralysis is only another manifestation of the infection. Anatomically, one finds but a negative evidence that the disease is a peripheral neuritis in the majority of the cases examined. The character of the pain is not neuralgic and it does not always follow the course of the nerve. Zona is not due to affection of the spinal cord, but is not improbably due to functional disturbance thereof. Landouzy holds that it is an infective malady because there exist concomitant general phenomena and there are no relapses, the first attack furnishing an immunity just as one observes in many infectious diseases. The author has met with two cases of recurrent zona. Zona is a syndrome which may be met with after trauma, infectious diseases such as influenza and pneumonia, also in poisoning by arsenic, lead, iodides, etc., and even in the course of uremia. The treatment is morphine either beneath the skin or by mouth. The subarachnoidean injection of cocaine gives only temporary relief and is therefore not justifiable. Antiseptic powders and absorbents must be employed to protect the eruption from secondary infection.

Hematuria of Traumatic Origin.—The clinical history of a case of this kind is given by KHOLTSOFF (Bolnichuaja Gazetta Botkina, N. 13, 1902). The patient came to the hospital and stated that since the previous night he had noticed a constant blood in the urine. Urination was neither painful nor abnormally frequent. On the day before his entrance to the hospital he was intoxicated and consequently did not know whether he sustained any trauma. Examination did not reveal anything abnormal in the region of the kidneys; prostate was slightly enlarged. A metal catheter entered the bladder very easily and brought out first bloody urine and then pure blood. The urine as well as the borax solution with which the bladder was washed out came away without any force; it appeared also that not all the fluid injected into the bladder returned. It was supposed that the bladder was torn, and as the general condition of the patient was serious an exploratory laparotomy was performed, but the bladder seemed to be healthy and the laparotomy wound was closed. On the fourth day the hematuria ceased. The patient made an uneventful recovery. A cystocopic examination made on the fifth day revealed numerous ecchymoses just behind the trigonum Lieutaudi. The case was one of incomplete rupture of the bladder.

Venereal Disease in China.—According to ROSANOFF (Russky Vratch, N. 13, 1902), who resides in Mkao, Manchuria, the opinion that syphilis was brought to that part of China by Russians is not correct; prostitution and syphilis and other genito-urinary diseases are just as much developed in China as they are in Europe. Furthermore he states that Chinese physicians have a special medicine for gonorrhea and a different one for the treatment of syphilis. A Russian soldier, whom Rosanoff treated for subacute gonorrhea and epididymitis, asked his permission to consult a Chinese physician. The latter examined him and then gave some brownish-yellow mixture, of which he ordered him to take about half an ounce at night for three consecutive days and one dose in a week. After each dose the patient had a feeling of general excitement; the pulse was rapid and tense; the urine contained albumin. A week after the last dose the induration of the epididymis was gone and the result of the examination for gonococci was negative. Rosanoff and his assistant, both healthy, then tried the medicine; it produced the same feeling of excitement; albumin appeared in the urine and the pulse became tense and rapid. He has also seen, though he did not follow them so carefully, cases in which the pills which the Chinese physicians give for the treatment of syphilis were effective. He promises to send some of the medicine to Russia for analysis.

SURGERY.

Sympathectomy in Basedow's Disease.—When Iboulay in 1896 cured by sympathectomy a case of Basedow's disease in which he had operated upon the thyroid five times without favorable result, the operative treatment of exophthalmic goiter was given an impulse in a new direction. Since that time sympathectomy has come to be the operation of choice for many surgeons. G. TOMASELLI (Gazz. degli Osped., Apr. 20, 1902) criticizes the various operations which have commonly been performed for the relief of this condition, rejecting all others with the possible exception of partial thyroidectomy, the disadvantages of which are, however, pointed out, and quotes statistics of sympathectomies showing

that in 57 cases this operation has brought about a complete cure in 11, and marked improvement in 30 patients so treated. The technic of the operation is discussed by the author and preference is given to incision along the anterior border of the mastoideus as affording a larger and lighter surgical field and being free from the risk of injury to the superficial cervical plexus and spinal accessory nerve, which are jeopardized by incision through the muscle or along its posterior border. In a case which the author reports sympathectomy was followed by a gradual diminution of exophthalmos, tachycardia, and by decrease in the size of the thyroid. Macroscopically as well as microscopically the excised sympathetic ganglion showed abnormalities, the presence of which seems to strengthen the theory that the origin of many of the symptoms in Basedow's disease can be traced to the sympathetic.

A New Surgical Dressing.—The manifold substitutes for iodoform belong to one or the other of two classes, the first comprising those which like iodoform depend for their activity upon free iodin elimination by contact with wound secretions. The second group includes the bismuth compounds, which act as protectives and diminish secretions but have very little antiseptic power. BARNES and HILLE (Jour. Am. Med. Assoc., May 10, 1902) have succeeded in producing a synthetic chemical compound from cresotinic acid, formaldehyde, bismuth hydroxide and iodine, which is advanced as a substitute for iodoform and is claimed to be antiseptic, astringent, sedative, desiccating, stimulating to granulations, and non-toxic. No other but the chemical name is given, monoiodid-di-bismuth-methylene-dicresotinate. It is an odorless, insoluble powder containing bismuth 45 per cent., iodine 15 per cent., and formaldehyde 3 per cent. The evolution of the last two is gradual. The authors have observed the use of the powder for six months past in many cases as a post-operative dressing and in active inflammatory processes with disorganization of tissues and excessive discharges, such as burns, abscesses, infected wounds, ulcers, etc.

Thirty Years of Renal Surgery.—It is now more than three decades since Gustav Simon of Heidelberg did the first nephrectomy. A full and valuable retrospect of the work since then is presented by V. SCHMIEDEN (Deut. Zeit. f. Chirurgie, Bd. 62). The literature contains histories of 1,118 cases since that first attempt. It is interesting to note the change in the death-rate which has been brought about by improved technic. In the seventies the operation was as often fatal as not. The next decade reduced the mortality to 34 per cent., while the ten years just past saw a further decrease to 17.4 per cent. In addition to the nephrectomies 700 nephrotomies, 54 pyelolithotomies, 34 kidney resections, 141 openings of paranephritic abscesses, and 53 exploratory incisions are discussed. The vital relation of the abdominal section to the lumbar is made clear. In the nephrectomies it was 33 per cent. to 22 per cent. Nephrotomy through the abdominal wall kills 29 per cent.; via the lumbar region 16 per cent. Collapse and peritonitis are by far the most frequent causes of death after nephrectomy. In each of these the percentage is many times greater in those cases in which the abdominal route has been employed. It is probable that the peritonitis in these cases develops, not as a result of infection of the peritoneum at the moment of operating, but as a result of retroperitoneal abscess-formation which subsequently breaks through the weakened membrane. For those who criticize the lumbar operation on the score of inability to examine the opposite kidney there is little ground to stand upon. Admirable results are obtained by a simple and harmless exploratory retroincision which places the organ beneath one's very eye and hand. The remaining criticism against the lumbar operation, *viz.*, that it does not afford sufficient room even with the employment of Kŏnig's incision, is met by Schede with the removal of the twelfth rib. This requires but a few moments and when carefully done there is nothing to fear from pneumothorax. A very frequent sequel of nephrotomy is fistula. Of the 700 discussed, this resulted in 37 per cent. It is a natural outcome of conservative methods. There are two types of fistula, *i.e.*, those through which urine escapes and those through which it does not. Inasmuch as the great majority of fistulæ are established because of conservative resections and the like, particularly in tuberculous kidneys, it seems that in many cases they should be discontinued. Most fistulæ not resulting from this source come from pyelolithotomies; so constant is this that all stones should be removed through incisions in the cortex. This is a bloodier procedure, but the wound heals much more kindly. Extirpations for malignancy give very depressing results. In the literature, but twenty cases have survived three years without recurrence. This limit is of little value; it does not in any way assure immunity from recurrence. Nephrectomy for unilateral hematuria has been done in sixteen cases; it is indicated only when hemorrhage is very severe and in the presence of what might be called renal hemophilia. Albumin from the other kidney, of course, contraindicates it. Nephrotomy, although older than Simon's operation, has but recently been well established; there is much work to be done upon it ere it is perfected. In nephralgia the cutting of the capsule is often attended by very marked improvement or by cure. Kidney resections have a very limited field. Thirty-four cases are recorded, but of these only half were properly indicated, as in renal injuries, benign tumors and cysts.

Surgery of the Heart.—Until very recently no surgeon was bold enough to attempt operations upon the heart of man, but since 1899 several successful attempts have been made to save life by suturing the wall of the heart after stab-wound. H. L. NIETERT (St. Louis Cour. of Med., May, 1902) shows that Ellsberg has performed, perhaps, the most valuable experiments to determine the possibilities in these operations and profiting by these experiments upon the lower animals he has been able to treat successfully at least one case. It has been found that the heart can be grasped with the hand or with forceps and gently compressed with no appreciable difference in its action. It can be penetrated by a needle or knife producing only temporary irregularity. Penetrating wounds made during systole bleed more than those inflicted during diastole, for the wound made during systole has a tendency to gape during diastole. Oblique wounds bleed less than do perpendicular ones, for they are more easily shut off by contraction of the muscle walls. An injury to the right ventricle proves much more serious than does one to the left, on account of the relative thickness of the wall and also because the blood of the right ventricle contains more carbon dioxide and is hence less coagulable. The wounds of the heart heal kindly and the cicatrix is usually complete in fourteen days. Interrupted sutures are better than continuous ones, for the muscle tissue included within the sutures is replaced by connective tissue and there is thus less loss of muscular fibers. By far the most frequent cause of death in heart wounds is hemorrhage—not shock, as was formerly supposed. Hemorrhage may prove fatal in one of two ways: (1) By exsanguination of the body, and (2) by compression of the heart. Exsanguination occurs if the wound leading externally be large or if free bleeding take place into the pleural cavities. Since the pleura is injured in 95 per cent. of the cases, death by exsanguination is

most frequent. When the blood flows out into the pericardial cavity and does not find exit from it compression of the heart results and this may continue to complete obstruction to the flow of blood, being manifested by dyspnea and cyanosis. The author reports one of these latter cases which he successfully treated by boldly opening the anterior chest-wall, allowing the blood to escape, and obtaining a good view of the heart-wall, which he closed with two silk sutures. The pleural cavity had evidently been infected, for an empyema followed, but was successfully operated upon later. Recovery eventually followed.

THERAPEUTICS.

Alcohol as an Antidote for Carbolic Acid.—From a study of the local effect of carbolic acid followed by applications of alcohol G. B. WALLACE (N. Y. Univ. Bull., Apr., 1902) concludes that alcohol checks the action of carbolic acid because it is a good solvent of the latter. In order to remove completely the local effects of carbolic acid the application of alcohol must follow quickly, *i.e.*, within five minutes, since the longer the interval the less evident is the antidotal action. Other solvents of carbolic acid, such as ether, benzol and chloroform, are also antidotal to carbolic acid, but are much less suitable for use than alcohol because their marked irritant action conceals their antidotal effects, and ether and chloroform owing to their volatility fail to penetrate sufficiently into the skin to remove the phenol present. By experiments on rabbits and cats Wallace was able to show that alcohol possesses no antidotal action after phenol has been absorbed.

Blood Poisons.—The various drugs which have a deleterious effect upon the blood may be conveniently divided into six classes. The first comprises the agglutinins, which act by changing the physical conditions of the red blood-cells so that they adhere to each other and thus occlude the vessels; ricin and abrin are the two best-known examples. Hemolysins form the second group; these dissolve out the hemoglobin which deposits in the liver and kidneys, while the stromata of the cells form multiple capillary emboli; arseniuretted hydrogen, phallin, helvellic and quillajic acids, senegin, sapotoxin and solanin belong to this group. Chlorate of potassium, pyrogallic acid and chrysarobin constitute the third class, which is characterized by the formation of methhemoglobin. Hydrocyanic acid and carbon monoxide belong to the fourth, in which special hemoglobin compounds are formed. Fifteen metals are capable of entering into union with hemoglobin, thus giving rise to the fifth group, while the sixth is made up of substances such as phenylhydrazin and aniline, which are capable of producing partial necrosis of the erythrocytes. A. KEIL (Arch. Internat. de Pharmacodyn. et de Thérap., Vol. X., No. 1 and 2) has studied the effects of the metals on the blood as revealed by the microscope. Granular degeneration of the red cells was present to a marked degree in all animals, and in those with nucleated red cells it could be seen that the process was really a disintegration of the nucleus within the cell or after extrusion. In mammals, however, normoblasts seemed to play no part in the process. It is probable that the granules represent metallic hemoglobin compounds.

Pharmacology of Iron.—The indiscriminate use of iron as a tonic without attention to the particular indication results in many unsatisfactory effects which are charged to the account of iron. J. AULDE (St. Louis Cour. of Med., May, 1902) believes that attention to certain combinations of iron with other drugs will much enhance its value as a tonic. As a hematinic it must be recognized as a superior remedy, but it must be given in small doses so that the degree of irritation shall not exceed that of gentle stimulation. When impaired nutrition is the dominant factor it may be used in nearly all cases. The addition of nuclein from animal sources is recommended in acute as well as in chronic cases of dyscrasia, thus favoring cell activity. This is especially valuable in cases of catarrh of the mucous membranes, and stress is also laid upon the use of the arseniate in these cases on account of the influence which arsenic has upon systemic metabolism. Attention is called to the exceptional value of iron in combination with zinc as a protoplasmic stimulant.

Respiratory Action of Some Poisons.—Some drugs which are known to affect the respiratory apparatus have again been studied by H. HAYASHI and K. MUTO (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4). They found that with curarine the conductivity of the peripheral ends of the motor nerves are diminished. Irritation of the nerve-trunks by the secondary coil will still reach the muscle at first, but later when the cerebral impulse is no longer active all electricity is ineffective. With fungus poison arrest of respiration takes place owing to paralysis of the phrenic; in large amounts an action similar to that of curarine occurs. Lastly, andromedotoxin was found to affect the motor nerves in such a way that, though they react normally to the electrical and the will impulse, they quickly are paralyzed after a short, strong irritation, but this paralysis disappears after a short rest. Respiratory disturbances are, however, due to centric causes in non-fatal doses; with fatal ones there is exhaustion of the respiratory center.

Action of Demulcents.—To determine whether the group of drugs known as demulcents really possess the property of allaying irritation, H. J. TAPPEINER (Arch. internat. de Pharmacodyn. et de Thérap., Vol. X., No. 1 and 2) conducted a large number of experiments on animals and human beings. A distinct diminished irritability of motor nerves by chemical salts was found in the presence of mucilaginous substances. The same can also be said of sensory nerves since pain appeared later and was less intense than in control experiments. The mucous membranes of the eyes and of the intestines gave less evidence of inflammation when demulcents were added. On the other hand, the cathartic action of drugs is enhanced, since their irritation is prolonged, owing to slowed absorption. It was also found that this absorption is less active in the stomach and the upper part of the intestines and that this holds true for water alone. All these experiments prove that the time-honored custom of using the demulcent to allay inflammation and irritation is based upon scientific facts.

Bufonin and Bufotalin.—The pharmacological action of the active ingredients of the secretion from the skin of lizards, bufonin and bufotalin, was thoroughly studied by E. S. FAUST (Arch. f. exp. Path. u. Pharmak., Vol. 47, No. 3 and 4). The latter closely resembles the drugs of the digitalin group in that it increases the blood-pressure owing to a rise of the pulse-volume and more forcible systolic contraction of the heart. The nervous apparatus of the heart is not influenced by it. After large doses cardiac paralysis with intact sensorium takes place. There is no direct action on the skeletal muscles and no local reaction on injection, as it is rapidly absorbed. Gastric disturbances are very common after both oral and hypodermic administration. The lethal dose is ½ milligram per kilogram. Bufonin in the main has the same action, but is much weaker, as less soluble; if, however, it be dissolved in dilute alcohol and injected it may produce systolic arrest of the heart. Chemically bufotalin differs from the drugs of the digitalis group in that it is a weak acid.

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OF MEDICAL SCIENCE.

COMMUNICATIONS in the form of Scientific Articles, Clinical Memoranda, Correspondence, or News Items of interest to the profession are invited from all parts of the world. Reprints to the number of 250 of original articles contributed exclusively to the MEDICAL NEWS will be furnished without charge if the request therefor accompanies the manuscript. When necessary to elucidate the text illustrations will be engraved from drawings or photographs furnished by the author. Manuscript should be typewritten.

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SATURDAY, JUNE 7, 1902.

THE SARATOGA MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

APART from the social features of the occasion, the coming meeting of the American Medical Association promises to be one of the most interesting in the history of the organization. For New Yorkers there is the prospect of that "consummation devoutly to be wished"—reunion among the members of the medical profession in the State. A prospect, by the way, that with all due modesty we may say is of interest not only to New York medical men but to those of the whole country.

The scientific proceedings, as they can be foreseen from the preliminary program, are to furnish an extremely suggestive and practically useful review of many of the questions that are uppermost in our minds as practitioners. The Section programs of the National Association meetings have in late years departed more and more from the hit-or-miss collections of chance articles, that formerly were almost the rule. Section chairmen and secretaries have evidently given time and thought to obtaining practical papers from men who waste few words, yet have much to say.

In the Section on Medicine the symposium on chronic nephritis promises to furnish a thorough review of the practical and scientific features of this important disease, as it is at present viewed by progressive medical men of varied experience. Some of the best medical schools of the country have representatives among the readers of the papers and the discussion is to be shared by other good authorities. There is also in this Section a most promising symposium on rheumatism and a discussion on gout in the United States.

In gynecology the principal subject of interest is the disposal of pus in the female pelvis. It is evident from the titles of papers that conservatism is to rule the day and that evacuation by the vaginal route, with its low mortality and absence of complications, is to be the conclusion of the discussion.

In the Section on Surgery there are to be discussions on the ever interesting subjects of surgical appendicitis and the treatment of enlargement of the prostate, initiated by well-known authorities on these subjects and shared by other surgeons of wide experience. The gall-bladder and the pancreas are to come in for that share of attention which in late years successful surgery has won for them.

The Section on State Medicine, Hygiene and Sanitary Science announces a symposium on tuberculosis that includes every aspect of that disease and is sure to bring out important features of prophylaxis and treatment, for it is to be handled by men who have been deeply interested in the disease for many years in nearly every part of the United States. This section is also to have symposia on influenza and pneumonia—the latter disease to be considered from the standpoints of its constantly increasing mortality in the midst of a falling death-rate from all other diseases, and of its possible contagiousness and epidemicity and the means to prevent it.

The Section on Children's Diseases is to have a very full discussion on that question of perennial interest—infant-feeding during hot weather.

The symposium on epilepsy in the Section on Nervous Diseases will, it may readily be seen from the titles of the papers, bring out interesting questions in regard to the general management and special treatment of this important and constantly increasing class of patients.

There is not a single section this year that will not prove tempting to the practitioner. The only drawback will be the impossibility of hearing everything one might wish. At this meeting the new arrangement of the business affairs of the

Association will prevent the general assemblies from interfering with section work and will throw the management of routine details, so difficult of proper treatment by large bodies, into the hands of the House of Delegates. There is every reason to think that the American Medical Association this year will surpass all records in interest and in attendance.

PROSTATIC SUPPURATION.

THE President of the New York Academy of Medicine, in opening the discussion of Dr. Alexander's paper on abscess of the prostate at the meeting of the Section on Genito-Urinary Diseases before the Academy proper, said that papers such as this did much to offset the prejudice against specialism and served to take the sting from Dr. Oliver Wendell Holme's famous incisive definition that "a specialist is a man possessed of a large amount of useless information." Dr. Alexander's paper (see abstract in the MEDICAL NEWS, May 31, p. 1048) certainly illustrates how much light may be thrown on an obscure subject by patient investigation and how careful study of details in anatomy and pathology may serve in connection with clinical observation to clear up hitherto dubious conditions. Prostatic suppuration thus treated becomes a new and interesting chapter in genito-urinary diseases, while heretofore it has occupied scarcely more than a paragraph on two of the ordinary textbook and has been always described rather conventionally.

For those who have seen what severe sequelæ may follow neglected cases of prostatic suppuration there is little need to insist on the necessity for early recognition of the condition. The fistulous tracts with involvement of all the tissues of the perineum and ischiorectal fossæ that may develop when evacuation of a prostatic abscess has been delayed too long, constitute one of the most annoying and obstinate pathological conditions in the whole range of surgery. It is true that the development of such a state of affairs is fortunately extremely rare. Its severity, however, makes its sure avoidance eminently desirable and justifies the taking of even serious precautions against it. There seems to be no doubt that prostatic suppuration is more frequent than has been thought and Dr. Alexander's demonstrations with regard to the layers of fascia that surround the prostate show that many of the cases of suppuration in the ischiorectal fossæ, which have hitherto been attributed to traumatic causes or infection from the rectum, are really offshoots of suppurative processes in the prostate that have found their way through the connective-tissue capsule of the gland.

Early recognition of the symptoms of prostatic abscess suggested by Dr. Alexander and confirmed by those who took part in the discussion will serve to prevent cases from proceeding to the production of periprostatitis. The occurrence of persistent albuminuria with no kidney condition or bladder suppuration to account for it is an important symptom. Taken in connection with a unilateral enlargement of the prostate, as demonstrated by bimanual examination and the occurrence of leucocytosis, this albuminuria would seem to justify the incision of the prostate if other local symptoms of some serious prostatic condition, as difficulty of urination, heat of the parts, and some tenesmus, be present. To wait as is usually suggested until fluctuation can be detected by the examining finger in the rectum is almost inevitably to subject the patient to all the risks of the pus finding its way into the periprostatic tissues, with lamentable results.

The comparative gravity of the operation heretofore thought advisable for the evacuation of a collection of pus in the prostate has rather encouraged the postponement of surgical intervention until it was manifest that it could not be put off further. The prerectal incision with dissection between the urethra and rectum down to the capsule of the prostate is not difficult, but it makes a large opening between two structures—the urinary and fecal canals—which exposes the patient to many risks of infection, and the healing process is always slow. Dr. Alexander's suggestion that prostate collections of pus be evacuated through the urethra—the method Nature so often employs—is especially worthy of commendation. A perineal section for this purpose is one of the easiest operations in genito-urinary practice, drainage is good, and healing is rapid and satisfactory. This method of treatment, because of its facility, will tempt surgeons to intervene much sooner than has hitherto been the case and will thus prove the best safeguard from the serious complications that so frequently result from delay and the consequent gravitation of infectious material into the periprostatic tissues. This operation will save many of the prolonged suppurative processes in the perineal regions that have proved so annoyingly obstinate to surgical treatment and so discouraging not only to the patient but also to the surgeon. Dr.

Alexander, by faithful investigation and conservative clinical observation in a favorite field, has made a distinct advance in genito-urinary surgery and one that is calculated to redound not a little to the honor of American surgery.

MEDICAL RECONCILIATION IN NEW YORK.

FOR the first time in many years the American Medical Association holds its annual meeting within the boundaries of New York State. This fact is all the more noteworthy when it is recalled that the national association owes its original organization to the initiative of medical men from this State.

An unfortunate understanding has for nearly twenty years kept the great body of the medical men of New York from sharing the benefits of, or lending the weight of their influence to, the American Medical Association. At length there seems to be a favorable opportunity to heal this breach of fellowship. The New York State Medical Association's invitation to hold this year's meeting of the National Association at Saratoga tion until it was manifest that it could not be put fession of the State should awaken to the realization of what is lost for themselves and medical interests generally by their isolation.

Moreover the members of the profession in the State are practically a unit in sincerely desiring reunion. In the large cities the gentlemen who belong to both the rival State medical organizations constitute a majority of the combined membership. It is evident, then, that reconciliation is to be the watchword at the coming meeting. Only certain technicalities and the personal feelings of a few men can stand against or further delay the termination of a state of affairs that began as a question of principle, but has now become, in the opinion of good authorities, a meaningless persistence in a childish pugnacity. It is easy to see that insistence on formalism may still raise a barrier to the union of the New York medical profession. This, however, would be an extremely mistaken and mischievous policy. Dignified yielding of apparent rights on both sides will do much at this time to remove any tenderness of feelings that may remain as the result of twenty years of separation. The New York State Medical Society certainly deserves the most careful consideration at the hands of the American Medical Association, not only because of the almost parental relation of early days, but because the more liberal policy of later years that has made possible the present union of the medical men of the country was really dictated by the firm stand in the matter taken by the State Society.

Let up hope, then, there will be a proper mutual yielding for the sake of harmony. With a reunited profession in New York State we shall be a long step nearer every wished-for reform in national medical affairs, closer to a national licensing board, a national board of health, and a ministry of public health. *Quod faustum vertat!* In wisdom may all of their differences be adjusted.

THE ACUTE INFECTIOUS FORM OF SYPHILIS.

SYPHILIS is ordinarily and very properly grouped with chronic diseases; yet even in its most typical form it differs from these, inasmuch as it presents a series of exacerbatory stages, more or less completely separated by intervals relatively free from symptoms. Fournier compared the disease to a drama in several acts, the active stages corresponding to the acts of the drama, the quiescent periods to the intermissions; a simile which leads Senator to remark that *omne simile claudicat;* "for," he declares, "unless it be an opera with musical intermezzi, the entr'acte is free, if not from all discomforts, at least from any relation to the acts of the drama; whereas a similar freedom does not exist, as the careful clinician is aware, during the syphilitic interludes."

Syphilis is so grateful a disease to treat that it is of the utmost importance that cases simulating various acute infectious diseases be promptly recognized and not mistaken for the latter. The details of this differentiation are discussed in a highly enlightened lecture delivered by Prof. Senator as part of the cycle on syphilis and gonorrhea prompted by the Prussian Central Committee.

In from 20 to 30 per cent. of cases of syphilis the constitutional onset of the disease is marked by fever, remittent, intermittent or atypical. The fever is accompanied by the phenomena characteristic of afebrile cases, namely, physical depression, pallor, anemia; nervous phenomena, such as vertigo, headache, pains in the joints and extremities; roseola, splenic enlargement. In distinguishing these cases from measles, the maculo-papular eruption of which may readily resemble forms observed in syphilis, Senator emphasizes the importance of the fever-curve of measles, the conjunctivitis, Koplik's spots and the diazo-reaction, the latter being a constant accompaniment of measles. Scarlet fever calls for attention to the fever-curve, which will be of

value only if typical, and to the distribution of the rash, which in syphilis usually attacks those parts of the face which in scarlet fever are spared.

The successful differentiation of variola and syphilis, in difficult cases, Senator declares an impossibility if any set of individual symptoms be relied on. The whole picture will have to be considered in forming an opinion as to the nature of such cases—the anamnesis, the existence of an epidemic of variola, vaccination and revaccination. As a rule, the clinical picture in smallpox is more severe than that of pustulous syphilis.

In considering typhoid fever, attention is directed to the absence of chronic swelling of the lymph-nodes, to the value of the Widal reaction, to the diazo-test. In regard to leucocytosis, Senator quotes Carrière, who found in syphilitic fever a hyperleucocytosis with relative increase of lymphocytes, in contradistinction to the hypoleucocytosis of typhoid fever. Not the least interesting paragraph in this résumé is that which reminds one of the acute diseases of the liver and kidneys which are of indubitable syphilitic origin. Syphilis may present the picture of a simple catarrhal icterus, or of acute hepatic atrophy. Recently E. Hoffmann described two cases of nephritis acuta syphilitica präcox which were remarkable for the extraordinarily large quantities of albumin found in the urine, the albumin in one instance equalling that of the blood-serum. Further reports of cases of acute primary nephritis of syphilitic origin are confidently expected.

ECHOES AND NEWS.

NEW YORK.

Pension Examiners.—The United States Pension Examiners of the State of New York will meet at Saratoga Springs June 9, 1902.

New York Academy of Medicine.—The following physicians have been recommended for election to resident fellowship by the Committee on Admissions: Drs. William Francis Campbell, Charles O. Maisch and William P. Spratling.

American Medical Editors' Association.—The annual meeting of this Association will be called to order in the Y.M.C.A. Hall, Saratoga Springs, N. Y., at 2 o'clock, June 9th. From present indications the attendance will be the largest in the history of the organization and the sessions will be of practical interest and value to medical journalists. The preliminary program includes the following: President's address by Alexander J. Stone, St. Paul; An Evolution in Journalism, by T. D. Crothers, Hartford, Conn.; The Reciprocal Relations Between Physicians and Medical Journals, by Burnside Foster, St. Paul; A Step Forward in Affairs for the Profession, by C. H. Hughes, St. Louis; The Evolution and Influence of Medical Journalism, by Dudley S. Reynolds, Louisville; International and State Medical Comity, by Clark Bell, New York; The Editorial, Its Place in Medical Literature, Frank P. Norbury, Jacksonville, Ill.

The Mayor and the City Institutions.—That Mayor Low is making himself acquainted with the details of the work of the city is daily made apparent. Heretofore pressure of work has prevented him from giving attention to the medical needs of the city. Last week, however, with Charities Commissioner Folks he inspected the institutions on Blackwell's Island and in the afternoon he attended the commencement of the Training School for Nurses on the Island. It is only by such visiting at first hand that the medical needs of this enormous city can be appreciated and it is a subject of congratulation that a step has been made in the right direction.

Changes at the College of Physicians and Surgeons.—As already intimated in the "Medical News," Dr. Abraham Jacobi, who has been for more than thirty years clinical professor of the diseases of children in the College of Physicians and Surgeons, has resigned his office. He was appointed professor emeritus and Dr. L. Emmett Holt was designated to succeed him. Other faculty appointments are as follows: Dr. L. E. LaFetra, instructor in the diseases of children; Dr. A. E. Schmitt, assistant in operative surgery; Dr. R. E. Buffington, assistant in normal histology; Dr. Russell B. Opitz, demonstrator in physiology.

PHILADELPHIA.

New Chair at Jefferson Medical College.—At the meeting of the Board of Trustees of Jefferson Medical College May 24th, a chair of clinical medicine was established for the first time in the history of the institution. Two men were elected to the professorship, Dr. Thomas G. Ashton and Dr. Julius L. Salinger. Both are graduates of Jefferson and have for several years been demonstrators of clinical medicine in that college in addition to serving on the staffs of the Jefferson and Philadelphia Hospitals, Dr. Salinger is associate editor of the "Philadelphia Medical Journal."

Protest Against Removal of the Municipal Hospital.—A strong protest is being made by the residents of the thirty-fifth ward against the location of the Municipal Hospital on the site mentioned in our letter of two weeks ago. Aversion to the proximity of the hospital itself is probably the real basis of the protest, although two reasons are being strongly urged. (1) It is claimed that the site is too far from the center of population, the trip being too long for the best interests of patients, and the roads during portions of each winter are impassable; (2) the reservoirs for the new, filtered water-supply of the city are to be located in that vicinity, where sewage from the institution may contaminate them. A Committee of Councils gave a hearing to the objectors June 2d.

Free Baths in Camden.—Camden is to have free public baths, an appropriation of $15,000 for the erection and maintenance of a bathhouse having been made by Councils.

Philadelphians to Train Nurses in the South.—It is rumored that a project is on foot in this city to establish several training-schools for nurses at various points in the Southern States. These will be for the double purpose of graduating trained nurses and for teaching the rudiments of caring for the sick to members of households. An outlay of at least $2,000,000 is projected. One gift of $250,000 has already been made and another donation of a site for one of the schools is practically secured. Promoters of the project are now in the South on a tour of investigation.

Dr. Finlay Honored.—At the seventy-seventh annual commencement of Jefferson Medical College, held May 29th, the degree of Doctor of Science was con-

ferred on Dr. Charles Finlay of Havana, Cuba, a member of the class of 1855. This honor was conferred on Dr. Finlay in recognition of his contributions to the science of medicine with reference to the etiology of yellow fever.

College Commencements.—That of Jefferson was held May 29th, when a class of 140 was graduated. Hon. Charles Emory Smith delivered the address.—The University of Pennsylvania will hold its 146th annual commencement June 18th. The address to the graduates will be delivered by President Nicholas Murray Butler of Columbia University.

Obituary.—Dr. Cloyes W. Gleason died May 30th at the age of eighty-one. He had practised medicine in this city for more than fifty years.—Dr. Thomas F. Corson, an assistant surgeon during the Civil War, but of late years a real-estate dealer, is dead at the age of sixty-two years.

Woman's Medical College.—Dr. Anna E. Broomall has resigned as head of the department of obstetrics, a position she has occupied since 1878.—Dr. Ella B. Everitt, chief resident physician of the Woman's Hospital, has been elected to the chair of gynecology, made vacant by the resignation of Dr. Hannah T. Croasdale. The Board of Directors has reorganized the several departments of the college and hospital, so that, beginning with September 1st, the heads of departments in the college will exercise authority over the same departments in the hospital.

Reception to Dr. Rixey.—The Medical Club of this city will give a reception to Dr. P. M. Rixey, Surgeon-General of the Navy, at the Art Club June 14th.

Deformity of Nose Corrected by Injection of Paraffin.—Dr. John B. Roberts reported this case at the Philadelphia County Medical Society May 28th. The patient had a deformed nose following a kick which fractured the bones and distorted the septum. Subcutaneous injection of paraffin accomplished very satisfactory correction of the deformity. The material, at a temperature of 105° F., was injected at five or six different points through an ordinary needle, the syringe being previously heated in hot water. The paraffin was brought to the proper melting-joint by the addition of petrolatum. Contrary to expectation, no inflammatory reaction followed the injections. There was slight irritation around the points of entry of the needle and after a few days a little ecchymosis, but no evidence of inflammation. Dr. B. Alexander Randall reported a similar case, satisfactory results being obtained.

Gunshot Wound of Heart.—Dr. L. J. Hammond reported this case. The ball entered the thorax about 1.5 inches above the ensiform cartilage and to the left of the sternum. The patient was brought to the Samaritan Hospital seven hours after injury and was doing so well that operation was not thought to be indicated. He continued to do well, with the exception of temporary elevations of temperature on the sixth, eleventh, and fourteenth days. Because of the freedom from symptoms and the man's urgent desires he was allowed to be up. On the fifteenth day vomiting began and was followed by almost instant death. Autopsy showed a wound of the left ventricle near the apex which had ruptured. The point emphasized by Dr. Hammond was the entire absence of heart symptoms during the life of the patient. The rupture of the wounded joint is believed to have been due to the violent exertion of vomiting, added to the strain of being up previously. It is believed that the patient might have recovered if he had been kept quiet and in the prone posture. This restraint was not indicated by the symptoms.

CHICAGO.

New Hospital Dedicated.—It is estimated that ten thousand persons assembled in the vicinity of St. Mary's of Nazareth new hospital to witness the procession of Polish societies and the dedication ceremonies. In equipment and methods this hospital ranks among the foremost in this country. It is the latest large hospital erected in Chicago, and is said to be the largest private hospital in the West. Six weeks ago seventeen patients were brought there from the old building on West Division Street, and to-day it has 170 patients in its wards and private rooms. The hospital occupies the square bounded by North Leavitt, Thomas, Haddon and Oakley Streets.

Appropriation for Smallpox.—Health Commissioner Reynolds has secured from the City Council $15,000 as an emergency appropriation to enable him to fight smallpox, and he said that most of the money would be used in paying old bills. He asked for $50,000 and got $15,000. The Health Department owes between $12,000 and $13,000 for bills contracted since January 1st in combating smallpox. That will leave $2,000 or $3,000 for current expenses in the smallpox crusade. There have been 203 cases of smallpox since the beginning of the year, and only two or three deaths, but the disease is now taking on a more virulent phase.

Need of Convalescent Hospital.—One of the most urgent needs of this city is a convalescent home or hospital. It is said that from Cook County Hospital alone 60 patients are discharged daily, and many of these are not sufficiently strong to be able to return to work. An institution located in the country would be of great value to these patients.

The Dispensary Question.—Resolutions denouncing the faculty of the College of Physicians and Surgeons for establishing free dispensaries throughout the city were adopted after a heated debate at a recent meeting of the Alumni Association of the College. Representatives of the faculty were present and answered charges made by the Committee on Resolutions. Resolutions declared that the free dispensaries encouraged pauperism and were directly in opposition to the graduates of the institution, who had settled in different parts of the city, only to find that their Alma Mater had surrounded them with free establishments. In answer to the charges, the secretary of the Faculty said that the dispensaries were established for the instruction of the students of the college as well as for the good that could be done for the poorer class.

Election of Officers of Confederation.—The following officers were elected: President, Dr. J. R. Currens, Two Rivers, Wis.; Vice-Presidents, Drs. J. M. Dinnen, Fort Wayne, Ind., and W. F. Curryer, Indianapolis, Ind.; Secretary, Dr. B. D. Harrison, Sault Ste. Marie, Mich.; Treasurer, Dr. W. A. Spurgeon, Muncie, Ind.; Executive Council, Drs. Harvey B. Dale, Oshkosh, Wis., Wm. Bell, Belding, Mich., and J. C. Webster, Lafayette, Ind.

Confederation of State Examining Boards.—A meeting of this body was held May 20th. Representatives from the Wisconsin, Indiana, Illinois and Michigan Boards were present, and the details for the reciprocal exchange of certificates between Indiana, Wisconsin and Michigan were perfected upon the basis of the two qualifications passed at the January meeting of the Confederation, as follows: (1) That a license or certificate of qualification of at least one year's date, and based on presentation of a satisfactory diploma and an examination before a board in specified branches of medicine and surgery, may be accepted at the discretion of a board in lieu of an examination, and as a basis upon which the license of a State may be issued.

(2) That a license or certificate of qualification issued by a State Board of Registration or medical examiners of at least one year's date, based upon presentation of a satisfactory diploma and on the recommendation of a State Board of Registration or medical examiners, as to the reputability of the applicant, may be accepted at the discretion of a board in lieu of an examination and as a basis upon which the license of a State may be issued. The Boards of the above-mentioned States meet in June, and will take such action then as will result in the immediate exchange of certificates.

Interneships.—For the examination for internes at Cook County Hospital, 13 candidates recently appeared from the University of Illinois; 30 from the University of Chicago, and 16 from the Northwestern University Medical School. Of these, 16 received appointments; 8 from Northwestern, 4 from Rush, and 4 from Illinois. The highest mark made by a successful candidate was 421.6; the lowest 366.2. Northwestern men won the three highest marks.

Disinfection.—Through the increase of the force of disinfectors three weeks ago, every call for disinfection has been complied with. This, together with the efforts of the Memorial Institute for Infectious Diseases in making increased provision for scarlet fever cases, gives promise that the spread of contagious diseases may soon be materially checked. Milder weather, by favoring ventilation and sunning of interiors, will also do much toward putting an end to their almost unprecedented prevalence. Advantage should be taken of every sunny day, not only in households where there has been contagious illness, but by every housekeeper.

Promotion of Dr. Bevan.—Dr. Arthur Dean Bevan has been elected professor of surgery at Rush Medical College, to fill the position made vacant by the death of Christian Fenger. Dr. Bevan was graduated from Rush in 1883 and did post-graduate work at the University of Leipzig. From 1883 to 1888 he was an officer in the United States Marine Hospital Service; from 1888 to 1900 professor of anatomy at Rush Medical College, and from 1900 to 1902 professor of surgical anatomy and associate professor of surgery in the same institution.

Lepra Maculoanesthetica.—Dr. David Lieberthal presented a Chinaman, thirty-four years of age, who was born in Hongkong. The patient could give no account of any other illness than the present. About ten years ago, without any preceding sign or sensation, he noticed a discoloration of the skin on the anterior and bilateral aspects of the lower two-thirds of the right limb. The color became lighter and simultaneously the sensibility began to diminish. Gradually the light color changed to brown, which became more marked as time went on. About two years ago he noticed a reddish, flat pimple on the left forearm, just below the flexor surface of the elbow, which gradually increased in size. Soon afterward central portions of the plaque began to flatten and to lose all color, while around its periphery the skin became brown. In this affected area the sensibility gradually diminished, until now no perception remains. A year ago the patient emigrated from China, and on landing in British Columbia, an eruption occurred all over his body of the same character as that now noticed on his face. On the body this eruption is greatly diminished. He remained in British Columbia until a short time ago, when he crossed the border and came to Chicago. Since that time the soles of his feet and palms of his hands feel dry, although they perspire. During all this time no other subjective symptoms than the last named have occurred, except the lack of sensation on the left arm and right leg. The patient presents the following features: The face is covered with an eruption of lentil to bean-sized, irregular spots which are dirty-brown, smooth and shiny. They are infiltrated and slightly raised. The trunk and upper part of the arms show a copious crop of pinkish, non-infiltrated spots, of the same size as those on the face and moderately desquamating. On the back is found a small number of red papules resembling a small papular syphilide. On the left forearm, near and reaching into the cubita, is found a plaque, slightly smaller than one's palm, and showing in the periphery a chocolate-brown, irregularly-defined zone of atrophic skin, and centrally a pinkish, flat infiltration intermingled with white, atrophic areas. In this whole area the sensibility in all its qualities are wanting, also on the whole flexor surface of the forearm, down to the wrist, where the perception for temperature is slightly maintained. The back of the chest is hyperesthetic, as well as the inner aspect of the right humerus. A large area enveloping the right leg in front, and on the sides reaching somewhat above the knee, shows irregular bands of brown, chocolate-colored, atrophic skin, especially in the peripheral parts, while in the center normal skin is intermingled with the slightly leucodermatic. The perception of pain and temperature is completely extinguished, as well as that of tactile sensation. Nowhere does the area of anesthesia correspond to the distribution of a certain nerve. Soles and palms show normal perspiration, but are dry, asteatotic, *i. e.*, without secretion of sebum. Of the accessible nerves, the ulnars as well as the crurals are thickened and slightly hyperesthetic. There is no weakness or atrophy of the muscles. The superficial as well as the deep reflexes are intensified. The glands above and below Poupart's ligament are enlarged. The mucous membrane of the nose, mouth and throat is perfectly normal. No examination of the blood was made up to the time of presenting the case. Considering the stability of the eruption on the face, while it is disappearing on the other parts of the body, the author thinks that a gradual change of the raised efflorescence on the face into nodules will take place within a reasonable time. This supposition seems to be supported by the finding of the small papules on the back which accompany cases of tubercular leprosy as lepra papulosa.

Will Open Hospital.—The Maimonides Hospital Association has been recently incorporated with the object of establishing and maintaining a hospital and dispensary on the West Side, and while the institution will not discriminate against any race or nationality, it is primarily intended to aid the afflicted Jews of the West Side. A hospital sufficiently large to accommodate thirty persons will be opened near Vernon Park on or about June 1st. A benefit performance to increase the hospital fund was given at Glickman's Theatre, Wednesday evening, May 21st.

New Rules for Clinics at the County Hospital.—Warden Healy of the County Hospital has announced some new rules to the internes and attending physicians regarding clinics. He has declared that patients who are likely to suffer any discomfort by going to the clinic will not be required to go. When Mr. Healy took charge of the hospital he adopted rules regarding clinics that were unsatisfactory to some of the medical schools. The Warden replied that he was not of the opinion that Cook County was operating a hospital for the benefit of medical schools. At that time he prohibited operations on women in the clinic room before the students of the medical colleges. The following patients, according to the rule, will not be taken hereafter to the clinics: Any patient who will suffer in any way discomfort or actual injury; any patient who is in danger of sudden death; any patient who would be discontented or displeased because of going to the clinic. These rules were formulated by Dr. McNeill, medical

officer of the day. The Warden approved of them, and said that they would be enforced.

Sunstroke in Chicago.—The first death of the season from sunstroke occurred during the past week, and the unseasonably hot weather, although brief in duration, had a decidedly unfavorable effect on the public health, shown chiefly in an increased mortality among infants.

CANADA.

Montreal Civic Hospital.—It has been decided that when the proposed new Contagious Diseases Hospital for Montreal has been constructed the patients will be cared for in the hospital according to their religious belief. The hospital is to be built on the pavilion plan, to consist of a series of buildings converging toward a central administration building, so constructed as to allow of division of the nursing staff according to Protestant or Catholic belief.

Medical Work in Labrador.—According to a letter received recently in Montreal from Dr. Wilfrid Grenfell, the English physician who is devoting his life to the amelioration of the fisher-folk of Labrador, there has been great destitution throughout the country during the past winter. Dr. Grenfell's work ranges from the treatment of a compound fracture to the making of a pair of boots from the skin of a freshly-killed seal. He has lately been successful in having another hospital erected and equipped at St. Anthony on the north French shore. This is the third institution of the kind in Labrador which, with the hospital-ship "Strathcona," serve as laudable charities for the inhabitants.

Consumption Sanitarium Destroyed by Fire.—On the morning of May 21st the Laurentian Sanitarium for the treatment of consumptives, situated at Ste. Agathe des Monts in the province of Quebec, about fifty miles from Montreal, was totally destroyed by fire. The institution was founded and owned by Dr. Arthur J. Richer of Montreal and for five years it had been doing good work for consumptives in the Province. It was in charge of Dr. J. A. Ferguson, who is said to have displayed unusual courage in the face of danger. There were fifteen patients undergoing treatment at the time of the disaster, one of whom, a woman, perished in the flames. The Sanitarium had accommodation for twenty patients, was delightfully situated and had a competent staff of nurses. The loss is said to be in the neighborhood of $15,000. The Gravenhurst Sanitarium has been placed at the disposal of the patients of Dr. Richer.

Montreal Foundling Hospital.—The report of the medical superintendent of the Montreal Foundling Hospital for the past year, which closed on May 15th, shows that at the beginning of the official year there were in residence thirty-two babies. There were admitted during the year 159, making a total of 191 for the year, an increase of twenty-two over the figures of the preceding year. The deaths number 112 for the year. The receipts amounted to $6,538 and the disbursements, $4,779.

A Medico-legal Case on Insurance.—The June number of the Canadian Journal of Medicine and Surgery contains the details of a very interesting medico-legal case from the pen of Dr. Arthur Jukes Johnson of Toronto, medico-legal expert. The widow of the late Dr. Trueman Duncombe of St. Thomas, Ont., brought action against the Mutual Life Insurance Company of New York for recovery of a $5,000 insurance policy on the life of her late husband. Dr. Duncombe, who was a practitioner of good standing in St. Thomas, a man of forty years of age, was examiner for the above company at that city. He held several policies in the company and on July 11, 1901, applied for an additional $5,000. It would appear that he filled in his own examination and had a brother practitioner sign it who was not an examiner for the Mutual Life, but who only a short time previous had passed Dr. Duncombe for another company. The Mutual Life accepted the risk. Dr. Duncombe died suddenly on October 2, 1901. The company paid all his other policies, but refused payment of the $5,000 on the ground of "fraud." Suit was brought by the widow for recovery, when it transpired at the trial that Dr. Duncombe had never been examined as set forth in the policy at all. The questions submitted to the jury were based upon whether Dr. Duncombe had secured the risk knowing that he was not a sound man at the time of the alleged examination. Although no autopsy was held, the experts all considered from the evidence regarding Dr. Duncombe's state of health subsequent to his alleged examination that the cause of death was thoracic aneurism, which must have existed prior to Dr. Duncombe's application for the policy. The action was dismissed with costs.

Personals.—Dr. F. LeM. Grasett, Professor of Surgery in Trinity Medical College, Toronto, is spending the summer in England.—A Sanitarium for Consumptives is to be erected at Vancouver under the supervision of Dr. Ernest Hall of Victoria, B.C.—Dr. Edgar has resigned from the superintendency of the General Hospital at Hamilton, Ont.—Dr. James Stewart of Montreal, Professor of Medicine at McGill, has been elected President of the Association of American Physicians.—Dr. Harris of the Royal Infirmary, Manchester, Eng., is on a tour of inspection of Canadian hospitals for the purpose of acquiring information for use in designing the new building shortly to be erected for the institution which he represents. He will shortly proceed to the United States on a similar mission.—Dr. Charles P. Johns of Kingston, Ont., has been appointed assistant medical superintendent of the Pancras Infirmary in London, Eng.—Dr. H. A. Beatty, Toronto, who recently refused a surgical registrarship at the Westminster Hospital, London, Eng., has been appointed senior surgical officer of the Ontario Division of the Canadian Pacific Railway.—Dr. E. Spragge of Toronto has been made senior medical officer of the same Division.—Dr. G. P. Girdwood has retired from the Chair of Chemistry in the Medical Faculty of McGill University. He has been appointed an emeritus professor of the Faculty of Medicine. Dr. Girdwood has been Professor of Chemistry since 1879.—Dr. Henderson has resigned as senior demonstrator of chemistry in the Macdonald chemistry building at McGill University.—Dr. Bovey, Dean of the Faculty of Applied Science at McGill, has been created a Fellow of the Royal Society of Great Britain.—Sir James Grant, M.D., Ottawa, has been elected President of the Royal Society of Canada.

GENERAL.

Medical Restriction.—Apropos of the withdrawal of the ban upon foreign physicians in Italy, it is stated that the British authorities in Cape Colony have decided to allow the right to practise only to those foreign physicians whose native countries extend a similar privilege to English physicians.

Virchow's Continued Improvement.—Already the sojourn in Teplitz-Schönau has wrought a marked improvement in the distinguished patient; with the aid of canes, and at times with one only, he walks about the corridors of the hotel, and his general condition grows steadily better.

American Roentgen Ray Society.—This society desires to announce that its next meeting will be held in the city of Chicago on December 10th and 11th of the current year. There has been secured a most excellent local committee of arrangements composed of

well-known and leading men of Chicago under the chairmanship of Dr. Ralph R. Campbell. This committee further embraces the names of Drs. John B. Murphy, Louis E. Schmidt, M. L. Harris, W. L. Baum, H. G. Anthony and W. A. Pusey. The personnel of this committee gives evidence of the earnest desire of the society to have its meetings entirely ethical and scientific. The very nature and mystery of the X-ray and the tremendous impetus in a therapeutic way, which has been given to its use during the past year, will unquestionably encourage a very widespread abuse on the part of many irresponsible persons. It is the hope of the society to serve a useful purpose in encouraging on the one hand a proper understanding of the uses and limitations of the X-ray, and on the other hand to limit and control the inevitable abuses which are now springing up on all sides. It is hoped that all those who feel an interest in the uses to which the wonderful discovery of Professor Roentgen may be put will bear the date of this next meeting in mind and communicate with the local committee of arrangements, or with the secretary of the society.

Alimentary Hygiene.—A commendable ordinance has been issued in Finistère, forbidding the use of old paper, journals, etc., as wrappings for food, owing to the possibility of spreading disease in this way.

Scientific Establishments in Indo-China.—Medical science is advanced beyond what one would expect in Indo-China, owing to the efforts of M. Doumer, who has founded successively the Pasteur Institute of Nha-Trang; the Bacterial Institute of Saigon, and a Bacteriological Laboratory and Medical School at Hanoï.

Greek Medical Congress.—The Second Greek Medical Congress will be held in Athens from May 17 to 21, 1903.

Medical College of Ohio.—A number of changes and additions have been made which will add greatly to the strength of the school. Among these are the following: The department of surgery will be conducted, didactically and clinically, by Profs. Conner and Ransohoff. Prof. C. A. L. Reed has been appointed to the chair of clinical gynecology, and Dr. A. H. Freiberg to that of orthopedic surgery; Prof. A. V. Phelps will have full control of the anatomical teaching of all classes (three years) and bedside instruction is to be systematically given in both the Good Samaritan and Cincinnati Hospitals.

American Medico-Psychological Association.—The 58th annual meeting of this Society will take place in Montreal June 17th, 18th, 19th and 20th at the Windsor Hotel. The following interesting program has been planned: Dementia Præcox, William Rush Dunton, M.D., Towson, Md.; The Early Diagnosis of General Paresis and the Possible Curability of the Disease in its Initial Stages, E. D. Bondurant, M.D., Mobile; An Analysis of Two Homicides, E. C. Runge, M.D., St. Louis; How Near Akin Are Insanity, Crime, and Degeneracy, J. Elvin Courtney, M.D., Denver; Litigious Insanity, Edward B. Lane, M.D., Boston; The Psychology of Anarchism, James Russell, M.D., Hamilton, Ont.; Conjugal Jealousy as a Cause and Excuse for Crime, from a Medico-Legal Standpoint, Geo. Villeneuve, M.D., Longue Pointe, Que.

Annual Address, by T. Wesley Mills, M.A., M.D., Professor of Physiology, McGill University, Montreal.

Care of the Insane in Brazil, W. H. Kidder, M.D., Ogdensburg, N. Y.; The Organic Sensations in Mental Pathology, Edward Cowles, M.D., Waverley, Mass.; A Case of Adrenal Tumors in the Left Mid-Frontal and Ascending Frontal Convolutions of the Brain, Walter Channing, M.D., W. M. Knowlton, M.D., Brookline, Mass.; Women Nurses in Hospitals for the Insane, A. B. Richardson, M.D., Washington, D.C.; Night Nurses in State Hospitals for the Insane, C. R. Woodson, M.D., St. Joseph, Mo.; Hydriatics as an Adjunct in the Treatment of Insanity, E. C. Dent, M.D., Ward's Island, N. Y.; Therapeutics as Applied to the Treatment of Insanity, Chas. G. Hill, M.D., Baltimore; The Possible Influence of Rational Conversation on the Insane, Jas. M. Buckley, D.D., LL.D., Morristown, N. J.; Instinct as an Important Factor in Medicine, T. J. Mitchell, M.D., Jackson, Miss.; Observations on the Insane Negro, W. F. Drewry, M.D., Petersburg, Va.; The Development of Self-Control, W. H. Hattie, M.D., Halifax, N. S.; Boarding Out for Chronic Insane, J. H. McBride, M.D., Pasadena, Cal.; Some Results and Possibilities in Family Care of the Insane in Massachusetts, Owen Copp, M.D., Boston.

Positions in the Philippines.—On June 17th and 18th there will be held an examination for the position of medical inspector and physician in the Philippine service. These positions are in the Philippine Civil Hospital, Bilibid Prison, Police Department, San Lazaro Hospital, and under the Board of Health, and in some instances include quarters in addition to the salaries named. Some of the salaries are less than $2,000 per annum. In these positions, however, living expenses are usually much less than in Manila, and the opportunity for outside practice perhaps greater. Thirty days' leave of absence is granted each year, exclusive of Sundays and holidays, and those employees who are promoted to $1,800 per annum are entitled to thirty-five days, or about forty days including Sundays and holidays. Appointees will be required to pay their traveling expenses to San Francisco, but the Government furnishes them transportation free of charge on its transports from that point to Manila, but exacts a charge of $1.50 a day for meals while en route, which is returned to the appointee upon his arrival at Manila.

Boric Acid Condemned as a Food Preservative.—The North German Gazette in a semi-officially inspired article says the German Government now speaks the last word regarding the use of boric acid for the preservation of meat. After giving an exhaustive description of a technical investigation and experiments on this subject the paper says: "The sanitary department and the medical authorities are unanimously agreed that the use of boric preparatives to the extent necessary for the preservation of meat should not be permitted."

American Urological Association.—The first annual meeting of this society will be held at Saratoga, June 13th and 14th. The following preliminary program is announced: President's Address, Advances in Urology, by Ramon Guitéras, New York; Exhibition of Renal Calculi, by Robert T. Morris, New York; Diagnosis of Renal Tuberculosis, by John von Glahn, New York; The Technic of Nephropexy, by Augustin H. Goelet, New York; The Knee-chest Position for Operation on the Ureters, by Howard A. Kelly, Baltimore, Md.; Stone in Ureter, with Report of Five Cases, by Orville Horwitz, Philadelphia, Pa.; The Importance of Separating Kidney Urines, by A. J. Downes, Philadelphia, Pa.; Cystoscopy in the Female, by Wm. R. Pryor, New York; Cystoscopy in the Male, by Wm. K. Otis, New York; Tuberculosis of the Bladder, by J. B. Bissell, New York; Operative Indications in Prostatic Hypertrophy, by H. H. Young, Baltimore, Md.; Permanent Results, Failures and Relapses Following the Bottini Operation, by F. Kreissl, Chicago, Ill.; A Study of Twenty-three Cases Treated by Perineal Prostatectomy, by A. H. Ferguson, Chicago, Ill.; The Diagnosis and Treatment of Chronic Prostatitis, by Winfield Ayres, New York; The Diagnosis and Operative Treatment of Prostatic Hypertrophy, with Reports of Cases and Exhibition of Specimens, by Bransford Lewis, St.

Louis, Mo.; Treatment of Uremia, by Egbert H. Grandin, New York; Tuberculosis of the Genito-urinary Tract, with Report of Cases and Conclusions, by Granville MacGowan, Los Angeles, Cal.; Outlines of Microscopical Urinalysis, by Louis Heitzman, New York; A Sketch of the Chemistry of the Urine, by Heinrich Stern, New York; A Case of Pregnancy Complicated with Pyonephrosis, by Charles G. Cumston, Boston, Mass.; A New Silver Salt in the Treatment of Urethritis, by Geo. K. Swinburne, New York; Failures in the Irrigation Treatment of Gonorrhea, by Ferd. C. Valentine, New York.

Obituary.—Dr. T. Ritchie Stone, one of Washington's most prominent physicians, died suddenly at his home last week. He was complaining during the earlier part of the day of a slight pain in his chest, but the trouble was thought to be an attack of indigestion and no serious thought was given it until he was found unconscious in his room. His death was due to heart failure. Dr. Stone was an old resident of Washington, having been born there, in the same house in which his death occurred, in 1857. He received his early education in the local schools and later took his degrees from the University of Virginia.

Prof. Adolf Kussmaul, who introduced the stomach-pump into medical practice, is dead. He was born in 1822, near Karlsruhe. Prof. Kussmaul was one of the physicians called to San Remo, Italy, in the month of October, 1888, to attend the German Prince Imperial, Frederick, later Emperor Frederick III., and the professor was one of those who pronounced himself most decidedly against the treatment followed by the English surgeon in charge, Sir Morell Mackenzie. After the custom of German professors he taught successively at various universities, beginning with Heidelberg, in 1855, and ending with Strassburg. Of his books the one which attracted most attention was "Störungen der Sprache" (the pathology of speech) which formed one of the Ziemssen handbooks. Other subjects to which he contributed original material are vaccination, epilepsy, and nervous diseases in general.

OBITUARY.

DR. W. M. ORD.

By the death of Dr. Ord of St. Thomas' Hospital, London, the profession of Great Britain has lost one of its most distinguished members. Many physicians on this side of the Atlantic will hear of his death with regret, as in his visits to this country he had made an enduring impression. Dr. Ord was a clinician of an unusual type. In the first place he had the great advantage of some years in general practice with his father. He was a good field naturalist, and to the end enjoyed the study of botany. Many will recall a delightful lecture a few years ago in the Lancet called, I think, "A Naturalist's Holiday." Only this time last year when he was in this country in response to an invitation to visit one of the cities and take part in a medical gathering, the reply came that he could not tear himself away from the beauties and novelty of a spring in the Connecticut Valley. Much of his common-sense way of looking at medical problems may be attributed to the attitude of mind fostered by these studies, and then he was a good clinical chemist and interested in the problems of metabolism and crystallization. Add to these a wide culture, a love of literature, and an unbounded enthusiasm in his work, and success was assured. Though his hospital appointments came comparatively late in life, Dr. Ord utilized the splendid opportunity which St. Thomas' Hospital offered, and soon acquired reputation and a large consulting practice. He will always be remembered by one brilliant piece of work—he named and made myxedema a familiar disease. The writer has always felt that in this connection Dr. Ord's work has, in some quarters at least, not received the recognition which it deserves. Gull described the disease, but only the energy and the perseverance of Ord gained for it a general recognition. The "Report on Myxedema" of the Clinical Society is one of the most noteworthy contributions to medicine made by the British School, and a large share of the credit is due to Dr. Ord, the chairman of the committee.

WILLIAM OSLER.

CORRESPONDENCE.

BYWAYS OF MEDICAL LITERATURE.—V.

TERMINOLOGIC PRUDERY.

A RECENT book of advice to young men and women written by a New York physician contains a reference to the old story that certain Hindu religious fakirs in the East spend their time in gazing upon their "abdominal centers." We do not know how many of the readers of the book will recognize their good old-fashioned navels under this new-fangled title. Surely this is carrying prudery of language beyond all rational bounds. At least the scientific name umbilicus might have been used with perfect propriety, or, if not, directions might be given in a note to say "prunes and prisms" directly after reading it so as to get rid of the dark brown taste the horrid word leaves behind it. How many young minds will be set thinking all sorts of things by finding that their navels are so improper. We may expect presumably soon to have the awful name navel oranges replaced by some such elegant circumlocution as "abdominal center oranges" and no one will ever breathe again that there is an anatomical peculiarity by which the very good who get to heaven may pick Adam and Eve out of the crowd. Verily, we are getting too good for our surroundings and a universal transmigration of the race may be shortly looked for whenever a New York physician cannot find it in his heart to say navel right out.

RUSKIN AND HIS PHYSICIANS.

LITERARY folk have never been noted for their faithful attention to physicians' prescriptions nor, be it said, proscriptions. They are apt to have a feeling that puts them above the observance of regulations that may serve very well for ordinary people. We are not so surprised, then, to find the following letter of John Ruskin with regard to his physicians in the article by Mr. Joline on "Meditations of an Autograph Collector" in the May number of Harper's Monthly, though we may sympathize with the physicians of so headstrong a patient.

"MY DEAREST TOM: Really your simplicity about naughty *me* is the most comic thing I know, among all my old friends. *Me* docile to doctors! I watched them (I had three) to see what they knew of the matter; did what they advised for two days; found they were utterly ignorant of the illness and were killing me. I had inflammation of the bowels, and they gave me ice! and tried to nourish me with milk! Another twelve hours and I should have been past hope. I stopped in the *middle* of a draught of ice-water, burning with insatiable thirst—thought over the illness myself steadily—and ordered the doctors out of the house. Everybody was in an agony, but I *swore* and raged till they had to give in—ordered hot toast and water in quantities, and mustard poultices to the bowels. One doctor had ordered fomentation; that I persevered in, adding mustard to give outside pain. I used brandy and water as

hot as I could drink it, for stimulant—kept myself up with it—washed myself out with floods of toast and water—and ate nothing and refused *all* medicine. In twenty-four hours I had brought the pain under—in twenty-four more I had healthy appetite for meat, and was safe—but the agony of poor Joanna! forced to give me meat, for I ordered roast chicken instantly—when the doctors, unable to get at me, were imploring *her* to prevail on me not to kill myself, as they said I should. The poor thing stood it nobly, of course; none of them could move me one whit. I forced them to give me cold roast beef and mustard at two o'clock in the morning! And here I am, thank God, to all intent and purpose quite well again—but I was within an ace of the grave—and I know now something of doctors that—well, I thought Molière hard enough on them—but he's complimentary to what I shall be after this. Thanks for all your good love—but *do* try to understand me a little better—indocilest, when I choose, of human creatures—but yours, most affectionately,

"JOHN RUSKIN."

Poor Ruskin was queer in many other things besides his opinion of physicians and their ways. He was ordinarily of too robust health to appreciate medical things much. It is the literary man as a confirmed invalid, such as Stevenson was, who learns to realize how much the physician's sympathy and help signify.

SNAKE-BITE AND ALCOHOL.

AT the beginning of the present year in the newspaper interviews which were published to show how wonderful was the new discovery in the transmission of nerve impulses announced by Professor Matthews at the meeting of the American Physiological Society, there was given as a proof that his theory was correct the fact that it explained why alcohol saved the lives of those who had been bitten by venomous snakes. We are just getting into the snake period of the year and, as a consequence, various repetitions of this wonderful scientific fact and the new significance given it by the Chicago scientist have been getting into the daily newspapers.

Even the New York Times, usually so conservative in medical matters, has had some remarks on the subject, more than half in jest, of course, but that will surely be taken more than half in earnest by many of their readers. The editor says: "The fact remains that the popular antidote for snake-poison (whisky) has never failed when taken in time. It is no longer to be regarded as an accidental and unscientific cure. Professor Loeb has discovered that death from snake-bite is due to the rapid liquefaction of the nerve substance and that it is the effect of whisky to retard or prevent this process. It is in favor of this popular remedy that usually it is more easy to get than any other. In no part of the country is it the habit of men to carry about in their pockets flasks of permanganate of potash, for example. Besides, there are far-sighted men who keep their nerve substance solidified to a degree which must render them virtually immune should they happen to meet any snakes."

In our report of a meeting of the New York Academy of Medicine in which a number of experts took part in a discussion of remedies for snake-bites, we said that there was not a single case on record of a person bitten by a venomous reptile having been cured by the administration of alcohol in any form. A number of individuals have been bitten by poisonous snakes while under the influence of liquor even to drunkenness, but they have nevertheless perished. In a large number of reported cases in which considerable amounts of alcohol were given after snake-bite, life was not saved. Stimulation is a very necessary part of the treatment of snake-bite. Such stimulants as strychnine, atropine and digitalis are, however, much better than alcohol. It is probable that the administration of whisky to excess lowers the resistive vitality and has been the real cause of the deaths in a certain number of cases in which the patient's life would have been saved had his normal resistive power not been thus abused.

PRUDERY IN EXTREMIS.

The London Lancet published not long ago an illustration of English medical prudery that probably caps the climax for anything in this line that has ever been reported. The Lancet says: "We have all heard of the American ladies whose sense of modesty was such that they clothed the legs of their tables and chairs in nether garments. The following occurrence at one of the great London hospitals is illustrative of feeling every whit as nice. A cold-storage chamber was being constructed in connection with the postmortem room and the secretary of the hospital, on going to see how the work was getting on, found that the chamber was being fitted with double doors and those of small size instead of one large door. He made inquiries as to the reason for this deviation from the original plan, when the chief carpenter replied, "Oh, sir, we are putting in double doors and a wooden partition in order to keep the sexes apart."

Those familiar with hospital affairs in America might be tempted to ask if the board of lady visitors had not had something to do with the change so calculated to preserve the proprieties even beyond the gates of death.

MEDICAL CONTRIBUTORS TO SCIENCE.

IN the June number of Scribner's Magazine, Harvey Maitland Watts, in an interesting article on "The Gulf Stream Myth and the Anticyclone," calls attention to the fact that the first true explanation of the winds and currents of the ocean was published in 1856 in the Nashville Journal of Medicine. Its author was William Ferrel, a Pennsylvania schoolmaster, who was at the time of its publication very much interested in medical subjects and supposed to be studying with a physician. This article is spoken of by good authorities on the subject as an epoch-making essay in meteorology. When, a little later, Professor Cleveland Abbe, of the United States Weather Bureau, summed up the modern scientific views as to the modification of climates by air-currents, he grounded his conclusion on what he calls Ferrel's splendid work.

This is only one of the many examples in scientific history of the interest of medical men in scientific subjects leading to far-reaching discoveries. This particular contribution to science is only now being credited with its proper value when the scientific world has come to the realization that the supposed climatic effects of the Gulf Stream are really a myth and founded on an abandoned hypothesis. It is not the currents of water in the Atlantic that modify Great Britain's climate, but the air-currents formerly a constant anticyclone above the ocean.

BLINDNESS DURING EYE MOVEMENTS.

WE called attention some time ago to the contention of Professor Raymond Dodge, of the Department of Psychology of Wesleyan University, that during movements of the eyes we are unable to see anything. The proof of this he considers to be ample from the fact that we are never able to see our own eyes move in a mirror. We may be able to see one eye move by means of the other, but a single eye can never perceive its own movements no matter how carefully it may watch for them. He says:

"The general law that we are practically blind during

a fraction of second at each eye movement has a number of unsuspected consequences. Many a sleight-of-hand trick, apparently depending only on rapidity of movement, really depends for its success on these moments of blindness when the spectators' eyes attempt to follow a rapid movement of the operator's hand, or unconsciously move in obedience to some other suggestion. More serious are such moments of blindness to the boxer or the fencer. Empirical expediency long ago developed the maxim that both the boxer and fencer should fixate the eyes of the opponent. This is not merely to avoid giving cues of intended movements, but also to avoid the disastrously numerous moments of blindness which would result if one would attempt to follow the motions of an opponent's hand.

The Professor gives some directions with regard to the viewing of scenery which are of especial value at this season of the year. To watch the scenery from a railway car with a minimum of fatigue pains must be taken to look through a window well ahead. It is even better, if one can sufficiently control the eye muscles to fixate some point on the window glass one or two seats ahead. The eyes will in this way, be kept motionless, while the general features of the landscape may be seen quite plainly.

SOCIETY PROCEEDINGS.

NEW YORK ACADEMY OF MEDICINE. SECTION ON PEDIATRICS.

Stated Meeting, Held May 8, 1902.

Rowland G. Freeman, M.D., Chairman.

Acute Leucemia in an Infant.—Dr. Sarah Welt Kakels reported a fatal case of this rather rare disease in a child of eighteen months and presented specimens of the blood, showing the characteristic appearances of leucemia. There are at the present time over seventy cases of leucemia reported in literature. Twenty-four of these cases occurred in children under ten years of age, not counting the two cases mentioned by Hübner as seen in his clinic, at a recent meeting of a German medical society. Dr. Kakels' patient was a dispensary case, whose family history presented no evidence of syphilis or of tuberculosis. The parents were Poles, healthy themselves and of healthy lineage. The next older child was four years of age and healthy. This was the third child and the first one had also been healthy. The child presented the rather simple symptoms of some diarrhea, with red spots on the skin and face, followed by some extravasation of blood from the bowels. At first the appetite was not disturbed. After a time, however, the little patient took on an intense pallor and a very waxy look. The expression became somewhat drawn and haggard. The appetite began to fail and when the child came to the clinic there were a number of purpuric spots over the body, which did not disappear on pressure. Some fresh subcutaneous hemorrhages were to be seen over the sacrum. The child kept the mouth open most of the time; the gums were spongy and showed a tendency to bleed and the breath was very fetid. The cervical glands enlarged early and tumors the size of a hazelnut could be felt beneath the jaw. Distinct, but not very great enlargement of the posterior cervical gland occurred. The thymic dulness was markedly increased, the spleen was enlarged, although not very greatly, and the liver was also slightly enlarged.

Blood Condition.—The blood-count showed that there were 2,200,000 red blood-cells to the cubic millimeter, while there were 682,000 white blood-cells. In the fields that were gone over in order to make this count four normoblasts occurred and six megaloblasts. This proportion of one white cell to three red cells is an extremely large number and indicates an intense disturbance of the blood-making apparatus. Pincus reports Pinele's case, in which there were 550,000 white cells to the cubic millimeter as the largest authenticated white count in the literature. In this case, contrary to the usual finding in such matters, there were more small lymphocytes than large ones. The cause of death in the case was asthenia and a terminal brain hemorrhage. The child had been running down so much and all medication had proved so hopeless that the end was inevitable and had been foreseen. Unfortunately it had been impossible to obtain an autopsy.

Duration of Disease and Etiology.—In this case the history seemed to show that the affection had not lasted more than four or five weeks. Professor Ebstein said that the longest duration of acute leucemia was nine weeks. At least one case has been reported, however, in which the patient did not die for sixteen weeks after the blood showed the symptoms of decided pathological leucocytosis. On the other hand, some cases run a much shorter course. One has been reported in which death occurred after four days and a half. These rapidly fatal cases are sometimes spoken of as *leucemia acutissima*. The cause of the disease remains a mystery. Friedreich, who described the original cases, thought the disease was due to an infection. Many observers have thought the same thing. In Dr. Kakels' case the enlargement of the gland around the mouth seemed to show that this had been the point of entry for the infectious material. Many organisms have been described as causative of leucemia. It is probable, however, that the ordinary bacteria mentioned by various writers were only secondary infectious agents. Mannaberg described a protozoan-like body that occurred in white cells. It is possible, however, that these are only due to degeneration in the leucocytes which are attributable to the fact that the blood-making apparatus is in a pathological condition. Loewit demonstrated certain appearances that occur in the nucleated red blood-cells in these cases, which he has considered to indicate the presence of a parasite within them. By other authorities, however, these appearances are considered to be artefacts. The disease has sometimes been thought to be contagious. The therapeutics of the disease is so far absolutely *nil*.

Possible Thymus Origin.—In discussing Dr. Kakel's case Dr. Charles Herman said that a recent French observer had reported an enormous thymus gland as occurring in a case of acute leucemia. At the present moment there is no satisfactory etiology for this fatal affection, therefore the possible etiological connection between the thymus and the disease must not be overlooked, but on the contrary deserves special investigation. In Dr. Kakels' case the occurrence of increased thymic dulness shows that if an autopsy had been allowed it is probable that very great enlargement of the thymus would have been found. The frequent occurrence of acute leucemia during the period of childhood, when the thymus is active may enable some fortunate observer to detect the etiological connection between the glands and the disease.

The remaining scientific business of the evening consisted of a

SYMPOSIUM ON THE SUMMER DIARRHEAS OF INFANCY.

The first paper on the etiology and prophylaxis of the summer diarrheas of children was read by Dr. Henry Heiman.

Nomenclature and Bacteriology.—Dr. Heiman said that the name summer diarrhea is not a desirable term. There is no seasonal basis for the gastro-enteritis which occurs so frequently in the summer time and it

is only the fact that the heat causes a predisposition to lowered vital resistance and active bacterial development that causes the affection to be more common in the summer. It might as well be said that there are winter diarrheas due to cold. There is no doubt now in the minds of practitioners that the gastro-enteritis of infancy is associated almost invariably with certain bacteria. Micro-organisms that are present in the gastro-intestinal tract without doing any harm may become specifically virulent under special circumstances. Of these the bacillus coli communis and certain of the pus micro-organisms are the most prominent. Hayem in Paris described special bacilli that occur constantly in green stools. Baginsky of Berlin described certain chromogenic and non-chromogenic bacteria that produce acid diarrhea. There seems to be good reason to think that bacteria play a rôle in the physiological process of digestion. Knowledge on this point, however, is not very definite. There seems to be a series of micro-organisms constantly present in the intestinal tract, some of which have antagonistic action to others, so that a sort of bacterial equlibrium is established.

Varieties of Gastro-enteritis.—Dr. Heiman considers that the gastro-enteritis affections of children may be divided into infective and non-infective varieties. The non-infective variety is due to the presence of irritating substances other than bacteria in the intestinal tract. The infective variety may be either inflammatory or non-inflammatory. The non-inflammatory gastro--enteritis is a simple condition of congestion without serious anatomical lesions and all that is needed for its treatment is to clean out the intestines and they at once resume their function. With regard to the inflammatory gastro-enteritis Dr. Heiman has endeavored by the injection of 2- and 5-per-cent. solutions of formalin to harden the tissues sufficiently for study post-mortem. This procedure does undoubtedly preserve epithelial cells better than do other methods.

Temperature and Gastro-enteritis.—When the outdoor temperature begins to run above 75° F. with 80 per cent. of humidity epidemics of gastro-enteritis develop. There is no doubt, however, that in recent years these affections have been much less common than heretofore. At Mt. Sinai Hospital much less summer diarrhea is seen, because mothers, even in the tenement-house districts, are better instructed with regard to the dangers of the development of the disease in the summer. The causes of the affection are in breast-fed babies, uncleanliness of the mother and of the child's mouth and overfeeding. Another prominent cause is the prolonged lactation by which the mothers hope to carry their children over the dangers of the second summer. Neither the quantity nor the quality of the mother's milk under these circumstances is such as to keep the child's restive vitality up to the normal. In bottle-fed babies the causes of gastro-enteritis are mainly such as are connected with the cleanliness of the milk and of the bottle. As children grow older they are given a mixed diet which is extremely unsuitable in many cases and proves irritating.

Prophylaxis.—The main principles of prophylaxis are suitable feeding and guarding against overfeeding. In the summer children are prone to be very thirsty and when they cry they should be given cool, boiled water. With regard to the severity of the disease, its early recognition is the surest way to prevent fatal development. The first symptoms of a diarrheic condition must be the signal for active treatment. Mothers are prone to think that a slight diarrhea is a necessary accompaniment of dentition. This causes them to neglect the first symptoms of gastro-enteritis until the condition has become serious. General prophylaxis includes especially the thorough inspection of the milk-supply. This must be accomplished through boards of health. Another important aid in prophylaxis is the suitable construction of tenement-houses. Air and proper opportunities for bathing children and absence of overcrowding, so that the little ones are able to sleep well at night, are main factors in keeping up the child's vitality during the trying time of the heated period. There seems no doubt that gastro-enteritis, like other infectious diseases, will soon be under proper control and that its mortality will be reduced still more than at the present time, although there has been a remarkable reduction in mortality during the last ten years.

Nephritis and Gastro-enteritis.—Dr. John Lovett Morse of Boston, Mass., read a paper on the renal complications of severe summer diarrhea which appears in this week's issue of the MEDICAL NEWS.

Treatment of Summer Diarrhea.—Dr. Charles Gilmore Kerley read a paper discussing the methods of treatment that have been found most successful in dispensary and hospital service, as well as in private practice, for the treatment of the severe gastro-enteritis of the summer. Most diarrheas occur under two years of age. At this time the child's diet consists mainly of milk. As soon as the diarrhea begins, all milk must be stopped. This is true no matter what its source—mother's milk, guaranteed cow's milk, dairy milk or grocery milk—all alike must be stopped completely and at once. It does no good to Pasteurize or to boil or to modify the milk in any manner. It must simply be stopped. If the child be nursing, there must be no food for twenty-four hours. Then nursing may be tried, but if it show any tendency to cause the diarrhea to persist even breast-milk must be stopped and substitutes employed. If the child be on a mixed diet consisting mainly of milk, all the cow's milk must be stopped at once. It may be necessary to stop for days even for weeks. Dr. Kerley has seen a case in which only after five months could the use of milk be resumed. The substitute foods should consist mainly of carbohydrates. A tablespoonful of barley flour or of rice, cooked in a pint of water, should be given in quantities about equal to the amount of milk taken before; this for a child under one year of age. For older children, more of the carbohydrates may be employed and the feeding mixture may be dextrinized. Such food is not pleasant, because of the sameness of its taste. To give a variety of savor, chicken-, mutton-, or beef-broth in small quantities may be added. Beef-juice may also be added at times, but sparingly and only with the idea of making the food tasty, not with the idea of adding to its nutritional qualities. The free use of brandy and whisky, which is sometimes advised because children are in a weakened condition, is not advisable. They rather add to the lack of resistive vitality and do not increase the store of vital force, as is sometimes taught. The use of egg albumin dissolved in water, used to be a favorite recommendation. This compound is not, however, as suitable in cases of gastro-enteric disturbance as are carbohydrates. Bacteria can be cultivated on egg-water, while the fermentation set up by the carbonhydrates is rather unfavorable to the growth, especially of the pathogenic bacteria. The use of certain of the proteid sparers has been suggested. The three classes of foods that come under this head are gelatin, fats, and carbohydrates. The fats are distasteful and hence cannot be used for any length of time. The end products of gelatin when digested are very similar to those of milk and hence they would probably prove as unsuitable for the disturbed gastro-intestinal tract. Carbohydrates are therefore the indicated food products. The by-products of carbohydrate digestion are mainly excreted through the lungs. This saves the intestines considerable irritation.

Method of Feeding.—The carbohydrates solution

should be given at the usual feeding-time and in about the same quantity as had before been given of milk. Needless to say, they must be thoroughly cooked, very much longer than is usually supposed to be necessary. The children must be very sedulously cared for in other ways. The little patients should occupy a large room that is kept thoroughly ventilated. Everything should be done that will add to its comfort. If there be any fever the infant should be sponged so as to reduce its temperature and give it the opportunities for rest that invariably come with temperature reduction.

Drug Treatment.—Calomel and castor oil are the only two drugs which seem to Dr. Kerley to be of any use. If the use of milk be continued in the dietary no drugs are any good. In many cases bismuth subnitrate seems to be a useful astringent and mechanically efficient drug for the prevention of irritation. It must be given not in any stated dose, but according to the needs of the individual case. The amount ingested must be sufficient to produce black stools. These are due to sulphide of bismuth. Unless this substance occur in the stools, good results cannot be looked for. Occasionally Dr. Kerley administers sulphur in the shape of washed sulphur in one-grain doses every two hours, in order to get the sulphide of bismuth reaction which seems to be of decided benefit. Unless the number of stools in the day be very large, no opium should be employed. It will invariably be noticed that when opium is employed the locking up of the secretions causes the absorption of toxins from the intestinal tract and makes the little patient's constitutional condition worse. When opium has to be employed, Dover's powder seems the most suitable preparation; from one-quarter to one-half a grain every two to three hours for a child a year old is sufficient. If necessary more opium should be employed or the doses should be given more frequently, so as to make the child less uncomfortable.

Irrigations.—If considerable mucus and blood appear in the stools, irrigations may be employed with decided advantage. This form of treatment is, however, only to be thought of when the stools are not very frequent. When the stools are frequent it is only an added bother and does no good. The tube should be inserted at least nine inches into the anus, in order that one may be sure that it will reach above the sigmoid and reach every part of the mucous membrane of the large intestine. The injection fluid should be lukewarm as a rule. If the child suffer from considerable fever, the temperature of the injection fluid may be much less than this so as to aid in the reduction of the temperature. If the affection be of the algid type and accompanied by considerable prostration, injections may be given at a temperature of 110° F., so as to have them act as a stimulant.

Prophylaxis.—As soon as any gastro-intestinal derangement is noted mothers should be on their guard to stop milk-feeding and see that no diarrheic condition is allowed to persist beyond a few hours. If the stools be offensive, mothers should stop milk-feeding and give a desertspoonful of castor oil. If the patient's condition does not improve rapidly, a physician should be consulted.

Temperature and Gastro-enteritis.—Dr. Stowell said that he has seen much less serious diarrheic conditions in recent years. The so-called cholera morbus is not limited to the summer. Of three deaths from this disease one occurred in August, one in October and one in February. For the diarrheic conditions the materia medica gives very little assistance and the limitation of the food is the most important remedial measure. Dr. Stowell has found chalk mixture and bismuth quite as good as the elaborate antiseptic preparations that have been so extensively advertised. There is not so much cholera infantum in tenement houses in recent years, because mothers are being taught more how to guard against the condition.

Chronic Overdistention and Gastro-enteritis.—Dr. B. Van D. Hedges said that chronic overdistention of the stomach is undoubtedly responsible for many diarrheic disturbances in children. Children's stomachs, capable of holding three to four ounces, have five to six ounces put into them. The diet of small children, even in families of the better class, may be very indiscriminate. Dr. Hedges saw recently a very bad case of diarrhea in a child eighteen months old. After careful questioning the mother confessed that the child had been given some lobster *à la Newburgh* the evening before. Dr. Hedges considers that opium should be used very carefully. No decrease in the number of stools should be allowed to occur, unless their character be better. The napkins should be put away for inspection so that the physician may judge for himself of the character of the stools. Subcarbonate of bismuth in large doses is of excellent service. It at least acts mechanically, rolling up the mucus and carrying it out of the intestines, thus removing a source of irritation.

Renal Symptoms.—Dr. Walter Lester Carr said that when renal complications exist there is a notable lack of symptoms from them. He has seen in certain of these cases a dyspnea out of all proportion to any cause in the lungs. Rapid pulse and vomiting uncontrollable by all ordinary means are also significant. Dr. Carr has never seen signs of edema though he has looked for it very carefully. There is apt to be very little albumin present, so that the condition is often overlooked.

Fulminant Diarrhea.—Dr. Wells of Englewood, New Jersey, said that in an epidemic of fulminant diarrhea seen in East Hampton, Long Island, streptococci were found in the stools and also in the milk. Several of the herds which supplied the milk to the town were found to have streptococcic infections of the udder. Veterinarians declared these cases to be unmistakably cowpox. When these herds were quarantined no further cases occurred, although it was in the hot weather.

Abuse of Antiseptics.—Dr. James J. Walsh said that a word of protest seems needed with regard to the use of salol and other such antiseptics. Undoubtedly the gastro-enteritis of the summer is due to bacteria. No antiseptic will hinder the multiplication of these bacteria, however, without injuring the patient. Salol has been used extensively, but kidney congestion is the rule in these cases and salol undoubtedly introduces an additional irritant into the kidney circulation. A number of drug-manufacturing firms are urging the physician to employ antiseptics, but they will surely prove harmful rather than beneficial. Gastro-intestinal antisepsis in children is eminently desirable, but it is a myth in practice.

Dietetic and Drug Treatment.—In closing the discussion Dr. Morse said the most important remedial measure is the emptying of the bowels so as to lessen the multiplication of the bacteria. The initial measure then must be starvation. Some other food than milk must be employed. Milk need not be withdrawn, however, for as long a time as Dr. Kerley insists. Brandy, notwithstanding many recommendations, is contraindicated. Bismuth is the only drug that is of service and should be given in large doses. The only indication for opium is the increase of peristalsis that sometimes occurs in simple diarrhea without pathological lesions. Irrigation has undoubtedly been overdone. Large injections are indicated only when there is inflammation of the colon. The use of salt solution subcutaneously thins the blood, lessens the irritation of the kidneys, and helps elimination.

Dr. Kerley in closing the discussion said that the stools must always form the indication for treatment and the physician should see them. Salol does no good and upsets the stomach.

BOOK REVIEWS.

THE INTERNATIONAL MEDICAL ANNUAL. A Year-Book of Treatment and Practitioner's Index. Twentieth Year. E. B. Treat & Co., New York and Chicago.

IN its twentieth year the "International Medical Annual" is well up to its reputation and we may even venture to say that there is even an improvement on recent issues. Certain subjects have been excellently handled. The subject of arsenic-poisoning, especially with reference to the cases that occurred a year or two ago in England from the consumption of beer into which arsenic had found its way because of its presence as an adulterant in one of the materials out of which the beer was made, is treated with the fulness due to so important a practical subject.

The departments of brain and intestinal surgery are very interestingly discussed, though one can not help having the feeling that they are incomplete and that we get at only the details of special interest to the reviewer. The illustrations are especially well chosen and are very well reproduced. The alphabetical arrangement adds to the handiness of the book, though it gives an air of fragmentariness to the material that detracts from the fulness of the treatment accorded many subjects.

A HAND-BOOK OF APPENDICITIS. By A. J. OCHSNER, M.D., Professor of Clinical Surgery, College of Physicians and Surgeons, Medical Department of the University of Illinois; Surgeon to the Augustana Hospital, etc., Chicago, C. P. Engelhard & Company.

THERE are hand-books for revenue only, too hastily written, too attractively produced as to typography and binding, and immodest in their claims of covering the entire field of some branch of medical science. They are veritable misfortunes to the student, although they may be money-makers for the publishers. This hand-book is of another class—that which aims to deal with one important protean disease, thereby making it really a monograph on its subject, namely, appendicitis. It is undoubtedly true that a library made up of similar, first-class monographs by only able men is of far greater value than one made up of so-called standard text-books. Dr. Ochsner's position in the field of American surgery needs no comment and is a warrant of the carefulness in preparation and the conservatively scientific precision in the deductions presented in this hand-book. It deserves to stand on the library shelf of every physician, beside such similar modest, but invaluable monographs as Keen's "Surgical Complications of Typhoid Fever" and Hare's "Medical Complications of Typhoid Fever." Dr. Ochsner's chapter on Non-operative Treatment of Appendicitis ought to be memorized, or "pasted in the hat" of every general practitioner of medicine, especially those in small outlying communities which possess no surgeons of the modern school.

LES FILATURES DE LIN. Dr. D. GLIBERT, Inspecteur-médecin du travail a l'administration céntrale de Bruxelles. Société Belge de Librairie, Bruxelles.

THIS is a professional hygienic study of the best type, a kind of work not uncommonly carried on in Europe, but unfortunately almost entirely neglected in this country, where there is all the more need of it.

This investigation concerning the influences on the health of workers in the factories of linen and cotton manufacture was instituted in 1895 by a royal decree and was prosecuted for six years. Studies are here recorded which might have any possible connection with the questions involved.

The work contains some 460 pages and a thorough review would take us beyond the limits usually accorded to reviews. It should be said, however, that every hygienist should read this well-written and beautifully-illustrated book and that presidents of boards of health should have it carefully digested and its sanitary lessons made to bear fruit.

LABORATORY WORK WITH MOSQUITOES. By WILLIAM N. BERKELEY, A.B., M.D., New York. Pediatrics Laboratory, New York.

THE activities of the past half-dozen years anent the growth and development of the mosquito have resulted in much practical value, not the least of which has been the issuance of some half-dozen manuals bearing on the problems involved. One of the smallest of these, and yet at the same time a very excellent treatise, is this by Dr. Berkeley.

He discusses the Development and Mode of Life of the *Culicidæ;* Their Collection, Feeding and Breeding; Practical Outlines of Anatomy; Key to U. S. Genera and Species; Dissection, Sectioning and Staining; Malarial Parasites; Morphology of Mosquito-Phase; Mosquitoes and Fiarial Disease, and Mosquitoes and Malarial Fevers, in several short and terse chapters.

The work is most excellent and its chapters on the yellow fever and its mosquito, *Stegomeia,* is new and the first exposition of the subject.

ON DISORDERS OF ASSIMILATION, DIGESTION, ETC. By SIR LAUDER BRUNTON, M.D., D.Sc., LL.D., etc. The MacMillan Company, New York.

THERE are few writers of modern times who can so engage the attention of the reader and at the same time illuminate the subject discussed as Sir Lauder Brunton. The present volume is an excellent illustration of his best style.

The work under discussion is a collection of scattered papers and addresses partly woven into a coherent treatise. Some of the papers were published as far back as 1873, while others are of very recent origin, yet all, old as well as new, show the same breadth of sound generalization and wealth of clinical observation. The chapters here presented are so extremely diverse that nothing short of the table of contents can show their many-sidedness. Shining throughout there is a strong practical note and the practitioner is the richer for this collected series of papers.

MERCK'S 1901 MANUAL OF THE MATERIA MEDICA. Merck & Company, New York and Chicago.

FOR a ready pocket-book for the practising physician and surgeon this little manual is worthy of recommendation. It contains names and chief synonyms of drugs and chemicals usual in modern medical practice; their physical form and appearance, solubilities, percentage strengths and physiological effects, therapeutic uses, modes of administration and application, regular and maximum dosage, incompatibles, antidotes, precautionary requirements, etc. It also has a comprehensive collection of prescriptions, embracing also the newer remedies of established merit; a classification of medicaments; and miscellany, comprising poisoning and its treatment, metric system and tables.

SPECIAL ARTICLES.

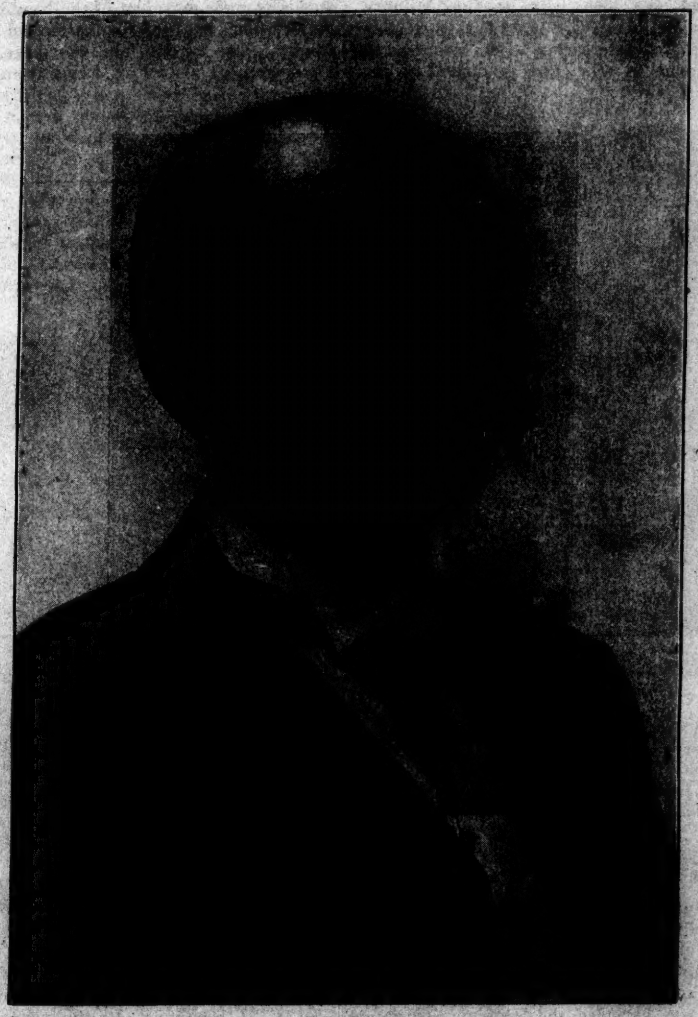
ITEMS OF PERSONAL INTEREST.

From the standpoint of the scientific interests, the success of the section meetings of the American Medical Association is largely the creation of their chairmen. The varied and highly interesting program which has been prepared for the annual meeting at Saratoga reflects the energy of these men and their coadjutors, the secretaries of the sections. It has been deemed of interest in this connection to better acquaint our readers with these men and the following short biographical sketches are here offered in the hope that they may prove of interest as a moment's record of this memorable occasion.

The Association is at the present time divided for purposes of convenience into twelve different sections: Medicine, Obstetrics and Gynecology; Surgery and Anatomy; State Medicine; Ophthalmology; Pediatrics; Stomatology; Nervous and Mental Diseases; Dermatology, Laryngology and Otology; Materia Medica; Pharmacy and Therapeutics, and Physiology and Pathology.

A word perhaps in advance might well be said of the worthy president of the American Medical Association.

John Allan Wyeth, surgeon, was born in Marshall County, Alabama, May 26, 1843; son of Louis Wyeth,

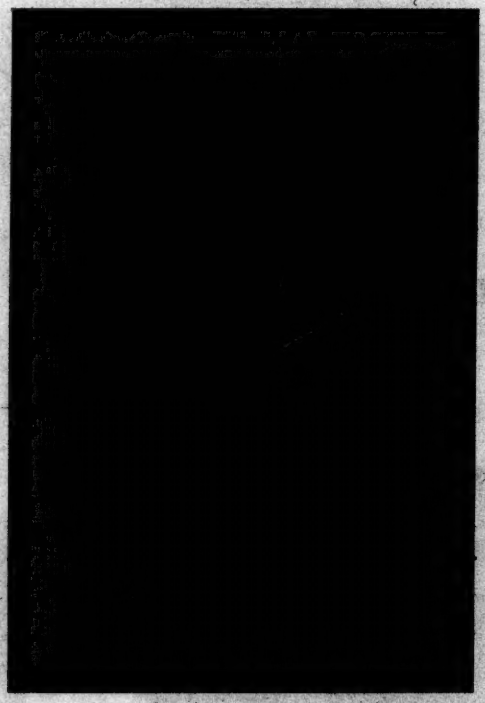


John A. Wyeth, M.D., LL.D.

lawyer and judge of one of the judicial districts of Alabama, who died in 1889, at the age of seventy-seven. The grandfather of Louis Wyeth was Ebenezer Wyeth, a farmer and private in Captain Samuel Thatcher's company of Massachusetts militia, which attacked the British and drove them into Boston on the retreat from Lexington on April 19, 1775. Thatcher's company was in the regiment of Colonel Gardner, who was killed at Bunker Hill. In this company of eighty men, of whom

a list is given in Paige's "History of Cambridge," "in commemoration of their patriotism in marching to the alarm," there were five Wyeths. The founder of this branch of the family in America was Nicholas Wyeth (or Wythe, as the name sometimes appeared in the middle of the seventeenth century), who settled and became proprietor of lands in what is now Cambridge, Mass., in 1645. Dr. Wyeth's mother was Euphemia Allan, daughter of John Allan, a Presbyterian clergyman who settled in Tennessee, having emigrated from England. He afterward removed to Huntsville, Ala.

The son was educated in the common school at Guntersville, Ala., and was one year at the Military Academy at Lagrange, Ala. He served as a private soldier in the Confederate army. He commenced the study of medicine in 1867, was graduated at the University of Louisville in 1869, took the degree of *ad eundem* at Bellevue Medical College, 1873; was appointed assistant demonstrator of anatomy in this college, 1873, and prosector to the chair of anatomy in 1874; published an article on "Dextral Preference in Man" in 1875; was awarded the Alumni Association prize in 1876, for "the best essay on any subject connected with surgery or surgical pathology," his subject being "Amputation at the Ankle Joint." He won the first prize of the American Medical Association in 1878 for an essay on "The Surgical Anatomy and Surgery of the Common, External and Internal Carotid Arteries," and second prize of the same Association in 1878 for an essay on "The Surgical Anatomy and Surgery of the Innominate and Subclavian Arteries." He was appointed surgeon to Mt. Sinai Hospital in 1880; founded the New York Polyclinic, a school of clinical medicine and surgery for practitioners, in 1882; became professor of surgery in that institution, and in 1893 president of the faculty. He is the author of a "Text Book on Surgery" (1886); "Bloodless Amputation at the Hip Joint" (1890); "Osteoplastic Operation for Correction of Deformities of the Nose and Palate" (1892); an historical sketch entitled "The Struggle for Oregon," in Harper's Magazine (1892), and a considerable number of contributions to various scientific periodicals. He was twice president of the New York Pathological Society, and in 1893 first vice-president of the American Medical Association. In 1896 he published the "Life of Lieutenant-General Nathan B. Forrest" (Harper & Bros.) and in 1900 was made president of the New York State Medical Association, and in 1901 president of the American Medical Association. The same year (1901) he received the degree of Doctor of Laws from the University of



George H. Simmons, M.D.

his native state, Alabama. In 1886 he was married to Florence Nightingale Sims, daughter of the eminent surgeon, James Marion Sims.

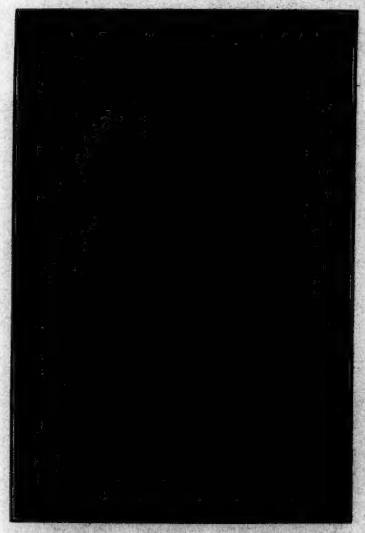
No more energetic worker for the American Medical Association could be found than its present secretary, Dr. G. H. Simmons. By the contagious influence of his indomitable perseverance and never-ceasing endeavors, the Association has risen to be a power and the medical profession of the country has been rapidly approaching a point of solidarity perhaps undreamed of a decade ago.

Dr. George H. Simmons was born in England in 1853, and was brought to the United States when a boy. He received his education at Tabor College and at the University of Nebraska. For three years he taught school in Lincoln, Neb. He spent two years in London and Vienna and obtained the degree of L.M. at the Rotunda Hospital, Dublin. He began the practice of medicine in Lincoln, Neb., in 1884, and remained

there until he removed to Chicago. For many years he was secretary of the Nebraska State Medical Society. He was elected editor of the Journal of the American Medical Association in February, 1899, and in June, 1899, he was elected secretary of the American Medical Association.

Did the space at our command warrant it, the many excellent coworkers on the various committees might be singled out for individual mention, but it has been found inexpedient to fill out this incomplete sketch. One other laborer in the field in the Empire State should not be omitted, however, even in this short summary. Dr. Frederick Holme Wiggin has been the mainspring of action in this State and much praise should be accorded him for his energy and unflinching devotion to the cause.

Dr. Frederick Holme Wiggin was born in England, at Kingston-on-Thames, where his parents temporarily resided, but in 1859, when six years old, he was brought to the United States. He was educated in New Haven, in Andover and at the Troy Polytechnic, beginning to study medicine in 1874 under Dr. James R. Wood of New York, and taking lectures at the Bellevue Hospital Medical College, from which he was graduated in 1877, and in which he served in different capacities until 1878. He practised in New York for one year,



FREDERICK HOLME WIGGIN, M.D.

then went to Litchfield, Conn., until 1890, when he returned to New York for permanent residence.

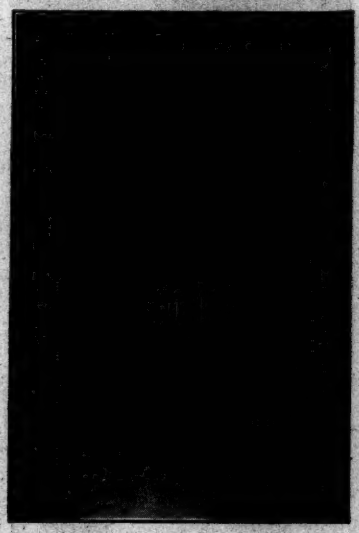
Dr. Wiggin's main work is general surgery and surgical gynecology. He was the first to report a case of contusion and rupture of the ileum with peritonitis and with no external wound, treated by celiotomy and primary enterectomy, followed by circular enterorrhaphy, which was published in the New York Medical Journal, January, 1894.

He has been president of the Litchfield County Medical Society; vice-president of the Connecticut Medical Society; is a member of several New York societies, of the Alumni of Bellevue, of the American Medical Association, honorary member of the Congress of German Surgeons of Berlin, and belongs to the Union League Club and to Delta Psi.

Dr. Wiggin's chief papers have been on "Intestinal Obstruction, Diagnosis and Treatment," Medical Record, July 23, 1892; "Celiotomy for Bilateral Pyosalpinx," New York Medical Journal, April 7, 1894, and "Perforation in Enteric Fever: Its Surgical Treatment," read at the one hundred and third meeting of the Connecticut Medical Society in 1895.

Passing to the chairmen of the different sections, that on the Practice of Medicine first claims attention. Dr. Frank Jones of Memphis, Tenn., is the chairman and Dr. Robert Preble of Chicago the secretary.

Dr. Jones describes himself as a plain, every-day practitioner with but few attainments. He was graduated from the Louisville Medical College of Kentucky in 1890 and is thus a young man in the profession. Dr. Jones has done very excellent work in the study of diseases of the chest, which branch of work he has



FRANK JONES, M.D.

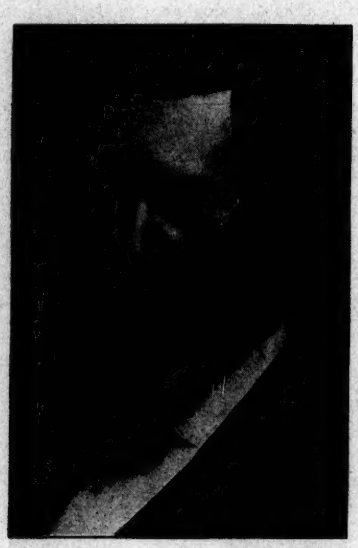
made a specialty. He has written most meritoriously on "Malarial Hematuria," "The Present Status of Pneumonia," "Some Points in Cardiac Diagnosis and Treatment," "A Plea for a More Rational Treatment of Cardiac Lesions," "Clinical Observations in Malaria as Observed in the Mississippi Delta," "Cardiac Lesions in the Negro," "Pleurisy with Effusion," etc. Society work has claimed considerable attention at Dr. Jones's hands and he has found time with a busy practice to take active part as a member in the Mississippi State Medical Society, in which he is an ex-secretary of the State Executive Committee; the Tennessee Medical Association, the West Tennessee Medical and Surgical Association, and others, in a number of which he has held office. Dr. Jones moreover is chief of clinic, demonstrator of physical diagnosis and lecturer on clinical medicine in the Memphis Hospital Medical College.

In the Section on Obstetrics and Diseases of Women, Dr. J. H. Carstens of Detroit is chairman and Dr. C. L. Bonifield of Cincinnati, secretary.

Dr. J. Henry Carstens was born June 9, 1848, in Kiel, Germany, while his father was in prison as a revolutionist. His family soon came to America and went directly to Detroit, where Dr. Carstens attended the public schools and the German-American Seminary. He learned the drug business and remained in it until

his nineteenth year, at which age he began to study medicine. He became the first matriculant of the Detroit Medical College, graduating in 1870, and was immediately put in charge of the College Dispensary and appointed lecturer on minor surgery. Dr. Carstens then changed from one subject to another, lecturing on almost every branch of medicine—dermatology, pathology, physical diagnosis and laryngology, diseases of the nervous system, diseases of children, differential diagnosis and clinical medicine.

In 1880 he was appointed professor of materia medica and therapeutics and lecturer on practice of medicine.



J. Henry Carstens, M.D.

His private practice developed, however, in the field of obstetrics and on the consolidation of the Detroit and the Michigan College of Medicine under the title of the Detroit College of Medicine he accepted the position of professor of obstetrics and clinical gynecology, which position he still holds. With the growth of modern gynecology into the field of abdominal and pelvic surgery, he devoted his entire time to the practice of abdominal surgery and gynecology.

Dr. Carstens has written on many branches of medicine, from cleft palate to reflex neurosis, from iodoform to scarlet fever, but during the last fifteen years he has written only along his special line of work—"Uterine Cancer;" "New Methods of Repair for Freshly Ruptured Perineum;" on "Pus Tubes;" on "The Technic of Vaginal Hysterectomy;" "Report of Six Cases of Cesarian Section;" on "The Technic of Abdominal Hysterectomy;" on "Nephropexy;" on "Gallstones;" on "Methods of Closing Abdominal Incision."

Dr. Carstens has contributed more than a dozen papers on the various phases of the "Appendicitis Question;" on "Gall-stones;" a number of articles on "Ventrofixation," "Extra-uterine Pregnancy," "Surgery of the Stomach and Intestines," "Hepatopexy."

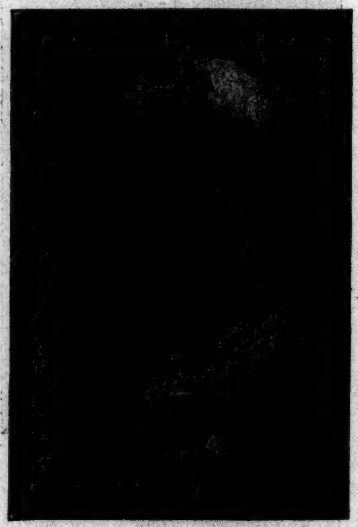
Dr. Carstens has been honored by his colleagues, having been placed in various positions of trust, such as president of the Detroit Medical Society, Detroit Gynecology Society, vice-president of the State Society. He was president of the American Association of Obstetrics and Gynecology. In 1895 he was appointed consulting obstetrician to the Women's Hospital and to the House of Providence, and gynecologist and chief-of-staff to Harper Hospital.

Dr. DeForest Willard of Philadelphia is the chairman of the Section on Surgery and Anatomy; Dr. James A. B. Bullit of Louisville is secretary.

Dr. Willard was born in Hartford, Conn., in the year 1846; he received the degree of A.M from Lafayette and in 1867, at the age of twenty-one, was graduated from the University of Pennsylvania, which institution conferred upon him the degree of Ph.D. in 1871. Dr. Willard has always practised in Philadelphia and has been president of a number of the local societies, notably the Philadelphia County Medical Society and the Philadelphia Academy of Surgery. Moreover, he has been president of the American Orthopedic Association and is the present president of the American Surgical Association.

As a teacher and practitioner of general and orthopedic surgery he has achieved much success, being clinical professor of orthopedic surgery in the University of Pennsylvania, surgeon to the Presbyterian Hospital, consulting surgeon to the Atlantic City Hospital, to the Pennsylvania State Hospital for the Insane, and to the New Jersey Training School. He is a Fellow of the College of Physicians, Philadelphia. Dr. Willard has contributed widely to the scientific and medical press, writing on experimental and clinical aspects of his specialty.

The Section on State Medicine, including Hygiene or Sanitary Science, has for its active leaders Dr. Arthur



DeForest Willard, M.D.

R. Reynolds of Chicago and Dr. H. M. Bracken of Minneapolis.

Dr. Arthur R. Reynolds was graduated from Bellevue Hospital Medical College, New York, in the class of 1876. He practised at Orion, Mich., until 1882, when he moved to Chicago. He was appointed Commissioner of health in April, 1893, by Mayor Carter H. Harrison the elder. With the change of administration in June, 1895, he left the office but was reappointed in April, 1897, by Carter H. Harrison, the present Mayor. He was reappointed in 1899 and again in 1901.

Dr. Reynolds is a member of the Chicago Medical Society, the Illinois State Medical Society, Medical As-

sociation, American Public Health Association, and of the Sanitary Institute of Great Britain. He is not connected with any college at the present time.

His very active work as commissioner of health in the city of Chicago speaks for itself. He has proved himself an able sanitarian, a scientist of the widest versatility, and an executive officer of much ability.

Dr. Frank Allport of Chicago is chairman of the Section on Ophthalmology, of which Dr. C. A. Veasey of Philadelphia is secretary.

Dr. Allport was born in Watertown, N. Y., in 1855. He was educated at the Chicago University and Racine College, and studied medicine at Heidelberg University, Long Island College, Brooklyn, and Chicago Medical College, from which latter institution he was graduated in 1876. He practised as a general country practitioner at Sycamore, Ill., for five years, and then, after special preparatory study in London, Paris, and New York, moved to Minneapolis, Minn., and practised eye and ear surgery exclusively.

Dr. Allport became professor of clinical ophthalmology and otology in the University of Minnesota, which position he held for many years. At the present time he is eye and ear surgeon to many of the hospitals, dispensaries, and charitable institutions of the city and for the railroads which enter the city. Dr. Allport was president of the Minnesota State Medical Society in 1895 and 1896. In 1897 he moved to Chicago and at the present time is professor of ophthalmology in the Chicago Policlinic, professor of ophthalmology and otology in the Woman's Department of the Northwestern

Arthur R. Reynolds, M.D.

University, ophthalmologist and otologist to St. Luke's, St. Joseph's and Wesley Hospitals, consulting ophthalmologist and otologist to the Chicago Board of Education, ophthalmologist and otologist for numerous railroads and corporations. Dr. Allport has always manifested a strong scientific mathematical interest and has devised many instruments which are in popular use, particularly his mastoid retractors and middle-ear forceps, which are used the world over.

Dr. Allport believes that one of the most important services to his specialty has been his efforts made toward regulating the eyesight and hearing of railway employees, which subject is to be made one of paramount interest at this meeting of the American Medical Association, by a committee appointed by himself as chairman of the Ophthalmological Section. Dr. Edward Jackson, of Denver, is chairman of this committee. The originating and establishment of the idea of the systematic examination of the eyes and ears of school children by short practical annual examinations by school teachers is another topic close to Dr. Allport's interests. These tests are so elementary that any teacher who has intelligence enough to teach can make the tests. The ascertaining of ten elementary facts enables the teacher to decide whether a child has any

Frank Allport, M.D.

serious eye or ear defect. If a defect be found, a card of warning is sent to the parent requesting, *but not ordering*, the parent to take the child either to the family physician or to some reputable ophthalmologist for examination. These tests are now being used quite generally throughout the United States and even in foreign countries, such as India, etc. The tests have become legally obligatory in the State of Connecticut, and have been adopted by many boards of education, city health departments, and State boards of health.

The Section on Dermatology is presided over by Dr. Henry W. Stelwagon of Philadelphia and Dr. R. R. Campbell of Chicago is secretary.

Dr. Stelwagon's career has been one of interest. He was graduated in medicine from the University of Pennsylvania in 1875 and served in the Philadelphia City Hospital in 1875-1876, after which he went abroad and studied in the Allgemeine Krankenhaus of Vienna for a period of two years. Returning to Philadelphia in 1878, he soon became chief officer of the Philadelphia Skin Dispensary, serving ten years. From 1885-1890 Dr. Stelwagon was instructor in dermatology at the University of Pennsylvania and was associated with Professor Duhring during these five years. Since 1888 he has been dermatologist to the Philadelphia City Hospital and to the Howard Hospital since 1885. In 1890 he was made clinical professor of dermatology in the Jefferson Medical College, which professorship he still holds and also that in the Woman's Medical College of Pennsylvania.

Dr. Stelwagon's literary work has been large in amount and excellent in quality. In addition to many minor articles he has also found time to publish or edit the following: "Compend on Diseases of the Skin," "Hand-atlas of Skin Diseases," "Treatise on Skin Disease," 1902; "Skin Diseases" (with Prof. Duhring) in Peffer's System of Medicine, 1885; "Skin Diseases," Wilson's Applied Therapeutics, 1896; contributions on dermatological subjects to Keating's Cyclopædia of Diseases of Children, 1889; to Morrow's System of Dermatology, 1896; to Hare's System of Therapeutics, 1900; to Buck's Reference Handbook of Medical Science, etc.

HENRY W. STELWAGON, M.D.

Dr. Stelwagon is a member of many local as well as foreign societies, among the latter being the Italian Society of Dermatology and Syphilography.

Dr. G. Hudson Makuen of Philadelphia is chairman of the Section on Laryngology and Otology, Dr. J. F. Burnhill of Indianapolis being secretary.

Dr. Makuen was born on a farm in Goshen, Orange County, N. Y., in 1855, and was graduated from Yale in 1884 and from the Jefferson Medical College in 1889. He was resident surgeon in the Cooper Hospital in Camden, N. J., for one year thereafter, and served in the clinic of laryngology and demonstrated anatomy in the Jefferson College for several years, and now holds the following positions: professor of defects of speech at the Philadelphia Polyclinic (the only chair of the kind in the world) and laryngologist to St. Mary's Hospital, and to the Douglas Memorial Hospital of Philadelphia.

Dr Makuen is a member of the American Laryngological Association, the American Laryngological, Rhinological and Otological Society, the American Academy of Medicine, of which he was president in 1900, the College of Physicians and Surgeons of Philadelphia and the American Association for the Advancement of Science.

In his own particular field of the treatment of speech defects, Dr. Makuen has been a pioneer and has contributed much to the understanding of many of the most important problems concerning voice production and voice development.

Dr. George F. Butler of Alma, Mich., and Dr. C. S. N. Hallberg of Chicago are respectively chairman and secretary of the Section on Materia Medica, Pharmacy and Therapeutics.

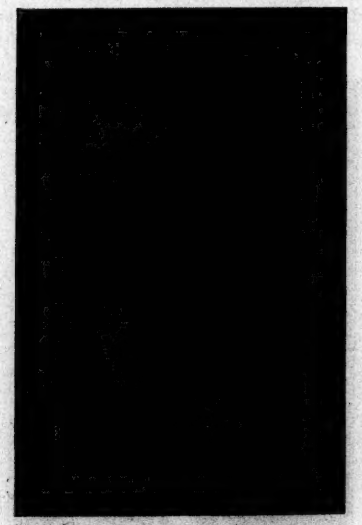
Dr. Butler was graduated from Rush Medical College in 1889 and began teaching medical pharmacy at that institution a week after his graduation. Later he taught materia medica and therapeutics and soon became professor of materia medica and therapeutics in the Woman's Medical College. In 1892 Dr. Butler resigned his position in Rush Medical College to become professor of materia medica, therapeutics and clinical medicine in the College of Physicians and Surgeons of Chicago, which chair he still holds.

In 1900 Dr. Butler left Chicago to become the medical society work and is a member of a number of the largest and best equipped sanitaria of this country.

Dr. Butler has always shown great activity in medical society work and is a member of a number of national, State and local societies.

A large number of important contributions to medical literature have been published by him, and he has also published one of the most popular text-books on materia medica, therapeutics and pharmacology which have appeared in a number of years. Its sixth edition is now in press.

Dr. Butler has been an able writer and a brilliant teacher, and moreover has strayed into the paths of general literature in his monograph on "Love and its Affinities (Religion and Lust);" a work of high moral purpose and spiritual discernment.



G. HUDSON MAKUEN, M.D.

Dr. Frank B. Wynn of Indianapolis is chairman of the Section on Physiology and Pathology, of which Dr. Joseph McFarland of Philadelphia is secretary.

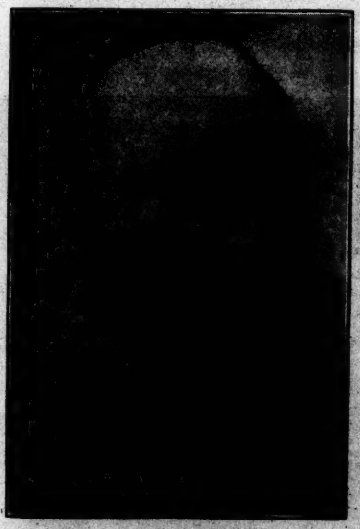
Dr. Wynn was born in the stirring times of the Civil War and if there be any subject upon which he is boastful it is that of his Hoosier nativity. Physical hardihood and industrious habits came to him as a country boy, in the region from which the scenes of Edward Eggleston's "Hoosier Schoolmaster" are drawn. His collegiate training was also at an Indiana University where he messed and engaged in class rushes, fraternity "spikes" and football with Senator Albert J.

Beveridge, James E. Watson and others who have since attained national distinction.

Dr. Wynn graduated in medicine at the Medical College of Ohio, afterward taking special work in the Carnegie Laboratory, New York, and spending two years in Berlin and Vienna, devoting particular attention to pathology and internal medicine.

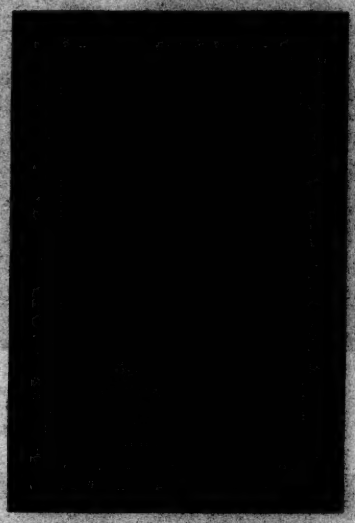
He has for several years been a member of the Faculty of the University of Indianopolis (Medical College of Indiana), holding at present the chair of pathology. Through his efforts the Medical Department of the Indianapolis Public Library was established and has grown to over eleven thousand volumes. His interest in this line of medical advancement is shown also by his connection with the founding and promotion of the American Association of Medical Librarians.

Dr. Wynn was one of those chiefly instrumental in the establishment of the Section on Pathology of the American Medical Association and was the first secretary of the same. His most conspicuous and distinctive service to the medical profession, however, is that of originator and promoter of the pathological or scientific exhibit idea as a feature of medical society work. As chairman of the Department of Pathology of the Indiana State Medical Society in 1897, he presented at the annual meeting an exhibit of pathological specimens and scientific demonstrations of diverse character. The unanimous verdict of the members concerning this unique departure in State society work was commendatory. By the time of the meeting in



GEORGE F. BUTLER, M.D.

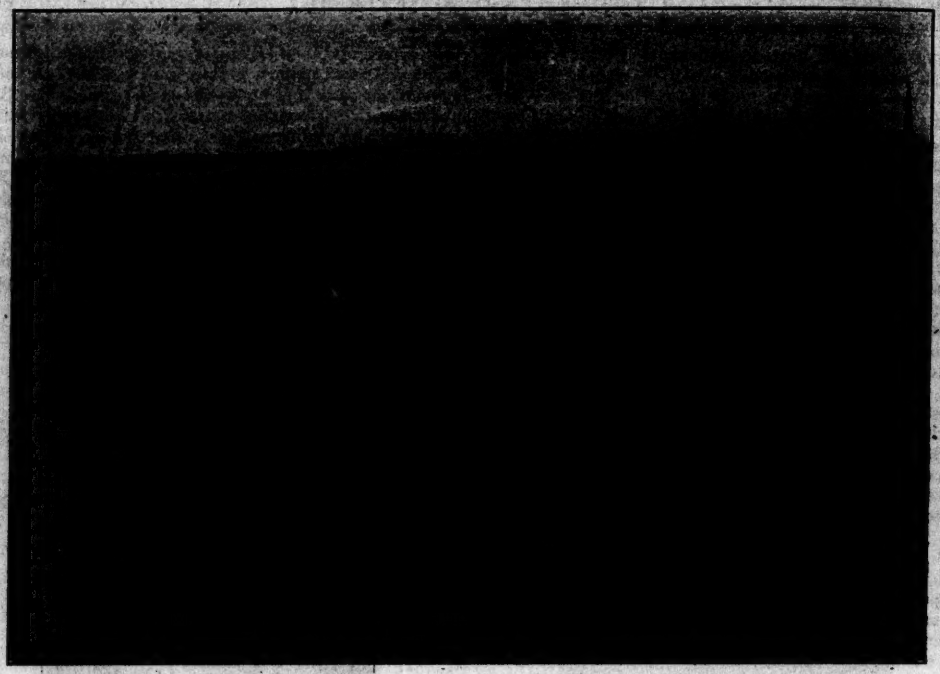
Indianapolis in 1899, the exhibit had grown to large proportions. The sentiment of approval was forcibly expressed by the Society voting an appropriation to bear the expense of taking the major part of the exhibit to the meeting of the American Medical Association, which was held a few days later at Columbus, Ohio. Its cordial reception at that place was a matter in which the Indiana profession took just pride. Dr. W. W. Keen, president of the Association, and other executive officers were so impressed by it that Dr. Wynn was invited to take steps to inaugurate a pathological exhibit at the Atlantic City meeting the following year. The gratifying success of the Atlantic City exhibit led to its permanent establishment as a feature of the Association and the appropriation of funds for its maintenance. It was made a great common school of pathology for the rank and file of the profession. Four State medical societies, nine medical colleges and universities, ten hospitals and museums of national prominence, the scientific departments of the Government and many private individuals contributed to the collection. This magnificent exhibit containing over 2,100 pathological specimens, representing every phase of pathology, embodied an idea conceived five years previously by Dr. Wynn, and through long and patient toil carried by him to a successful issue. In testimony of the appre-



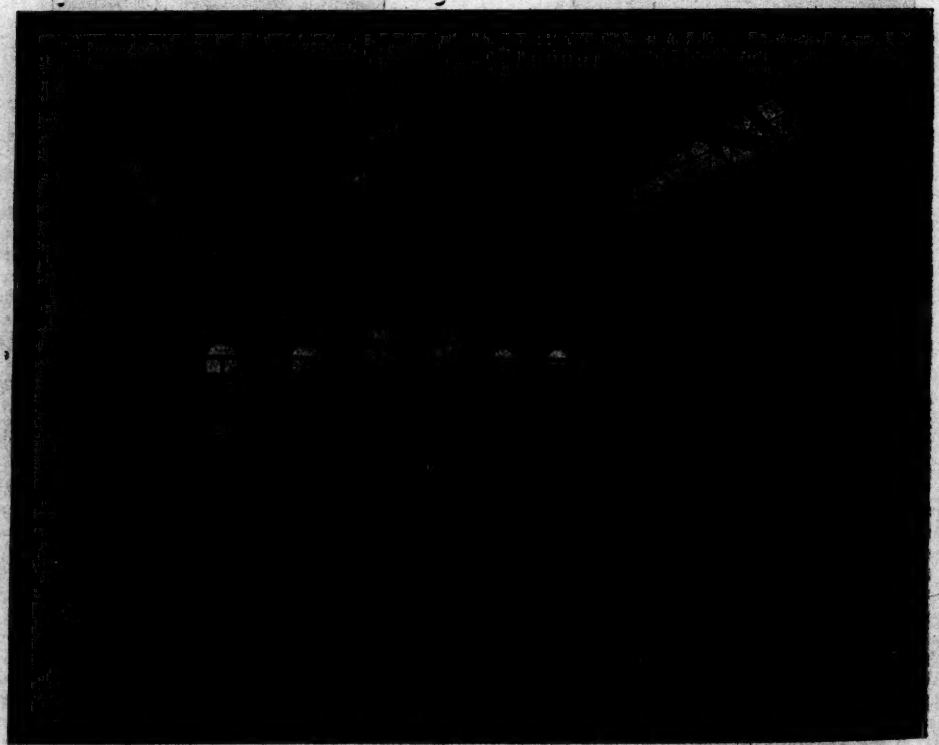
FRANK B. WYNN, M.D.

ciation he was made chairman of the Section on Pathology and Physiology.

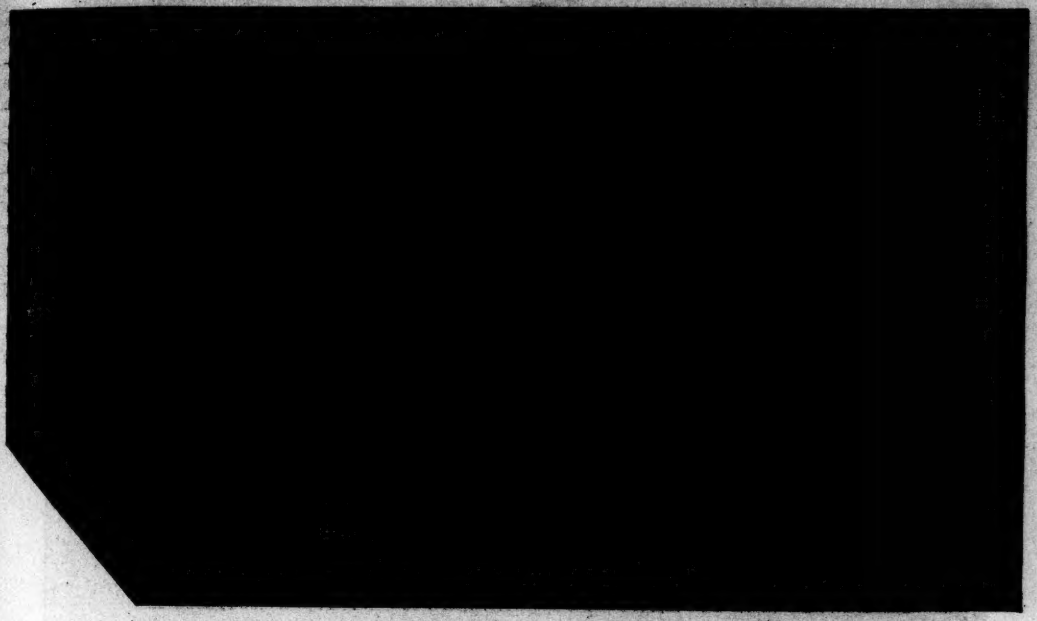
Multiplicity of Bacterial Products.—The theory has been advanced that each variety of bacteria produces a number of toxic products, one of which causes the prominent symptoms of an infectious disease, the others the subsidiary features. From a series of cultural and inoculation experiments made by A. CHARRIN (Deut. med. Woch., Apr. 17, 1902) with the B. pyocyaneus, it is evident that two classes of products can be isolated from the cultures, those which are soluble in alcohol and those which are not so. The soluble elements affect the circulation and the nervous system principally, but their action is much less marked than that of the insoluble products. The latter may cause phenomena which, although not so rapid in appearance, are more varied and severe and also give a specific character to the disease. The insoluble components are, moreover, the ones which confer immunity and their injection develops a substance in the blood-serum which can withstand a temperature of 55° C. and has a marked effect on the B. pyocyaneus. This produces less pigment and gives off less ammonia; its motility changed and its growth diminished. The substance is neither alexin nor agglutinin as proved by the author, but may be considered a hitherto unknown product. Similar attributes can probably be found in other bacteria and upon this multiplicity and variability, the form, type, localization, etc., of the infectious diseases undoubtedly in great part depend.



VIEW OF CONVENTION HALL,
Where the General Sessions will be held.



INTERIOR OF CONVENTION HALL.



PORTION OF INTERIOR OF HATHORN SPRINGS PAVILION.

In this pavilion will be located the Bureau of Registration, Bureau of Information, Post Office, and Exhibit Halls.

WHERE TO GO.

THE contrast between the places of meeting of the American Medical Association last year and this year are striking enough to excite interest. In 1901 the Eastern physicians met their brothers in the capital of Minnesota, surrounded by the tremendous enterprise and business schemes of the West, were entertained by them in lavish fashion, and taken on a pleasure jaunt of a thousand miles into the weird cañons of the Yellowstone. It was a magnificent trip following a most profitable and well-planned meeting. This year the Eastern men invite their Western hosts to meet them in their pleasure palaces and gardens, where for the last hundred years they have been wont to take their recreation when their money-making hours were over. No place could be more appropriate for a convention of physicians than Saratoga, which is the nation's most celebrated health resort, nor is there any place where physicians would more naturally desire to meet than in one rendered famous by their own profession.

The tendency of bodies politic and scientific, as well as social, has been to meet in Saratoga, where the park-like beauty and luxury of the watering-place make it possible to combine a holiday with a convention. The Convention Hall, which was built for the purpose of accommodating large audiences, and the spacious rooms which various hotels have placed at the disposal of the American Medical Association, all combine to give a meeting place that is a source of delight as well as of convenience. The places in which the various sections will meet are centrally located and commodious. The short walks hither and thither are in the cool of shade-trees with long vistas of elms and wide stretches of lawn.

The BUREAU OF REGISTRATION will be found in the HATHORN SPRING BUILDING on Spring Street. In this same building the BUREAU OF INFORMATION will be found and also the GENERAL EXHIBITS OF DRUGS, APPLIANCES, etc.

GENERAL SESSIONS will meet in CONVENTION HALL on Broadway.

Section on GENERAL MEDICINE, in the parlors of the GRAND UNION HOTEL.

Section on SURGERY AND ANATOMY, in the PATTERSON SPRING BUILDING, Philadelphia Street.

Section on MATERIA MEDICA AND THERAPEUTICS, in the GRAND UNION HOTEL.

Section on NERVOUS AND MENTAL DISEASES, in the GRAND UNION HOTEL.

Section on OBSTETRICS AND GYNECOLOGY, in the THEATER SARATOGA, Philadelphia Street.

Section on PEDIATRICS, in the PARISH HOUSE, 17 Washington Street.

Section on DERMATOLOGY, in the AMERICAN HOTEL, Broadway, opposite Philadelphia Street.

Section on HYGIENE AND SANITARY SCIENCE, in the UNITED STATES HOTEL, Broadway and Division Street.

Section on OPHTHALMOLOGY, LARYNGOLOGY AND OTOLOGY, in the Y. M. C. A. BUILDING, Broadway and Caroline Street.

Section on STOMATOLOGY, in the G. A. R. HALL, POST OFFICE BUILDING, opposite the United States Hotel.

The PATHOLOGICAL EXHIBIT will be shown in the ball room of CONGRESS HALL, Broadway and Spring Street.

The HOUSE OF DELEGATES will meet in the SUPREME COURT ROOM, TOWN HALL, and the TRUSTEES and the JUDICIAL COUNCIL in the UNITED STATES HOTEL.

GLIMPSES OF SARATOGA.

Apart from the serious business of the convention there is offered this year an unusual opportunity for relaxation and social enjoyment. There will be no lack of advice showered upon the delegates, in the form of pictorial pamphlets indicating the drives and points of interest and the historical sites in and around Saratoga. To make a choice would be bewildering and, with the closest economy of time, one could not in the whole number of hours devoted to the convention see the scheduled points of interest. The Committee on Entertainment have, however, provided a series of drives and excursions that will include the chief attractions of this unique village where millionaires and invalids, horse-trainers and scientific leaders meet and mingle in a sort of earthly paradise and then go back to their own places.

If these springs were in some remote corner of a distant State, Saratoga would have the same clientèle as the Hot Springs of Arkansas, or others equally celebrated for their healing powers; but lying as it does in the line of the great water-way, between the Hudson River and Lake George, and shut in in the near distance by the Adirondacks on the west and the White Mountains in the east, it has become a cosmopolitan center as well as a spa. Travelers from early days passed through the region. Historic movements of the Indians, followed by the migrations of white men made in and around the neighborhood of Saratoga, are a historic setting of warfare and battle that is known to every patriotic boy who has read Cooper's novels and studied his American history.

It is said that the first white man to see Lake George, Isaac Joguest, came through Saratoga, a prisoner in

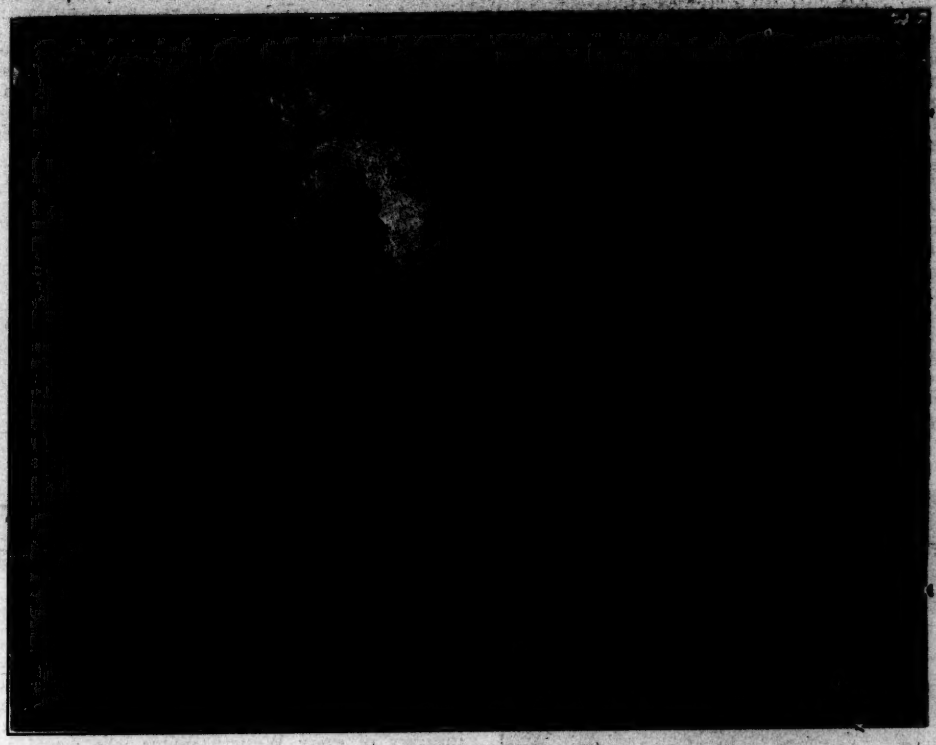
NORTH BROADWAY, LOOKING NORTH.

The mineral springs are, of course, Saratoga's reason for existence. A fault in the underlying strata of rocks that throws the mineral-laden waters to the surface causes a perpetual outgushing of waters, the medicinal properties of which are as famous as are any in the world. No one should fail to visit these springs, for the morning constitutional procession is one of the interesting sights; but every one should be chary of tippling at the various effervescing and peculiar-tasting springs, for, though the Saratoga waters bring health to those who drink with discretion on the advice of their physicians, they bring dire confusion to the sojourner of a few days, who intersperses the lavish meals of the hotels with indiscriminate therapeutic drinks.

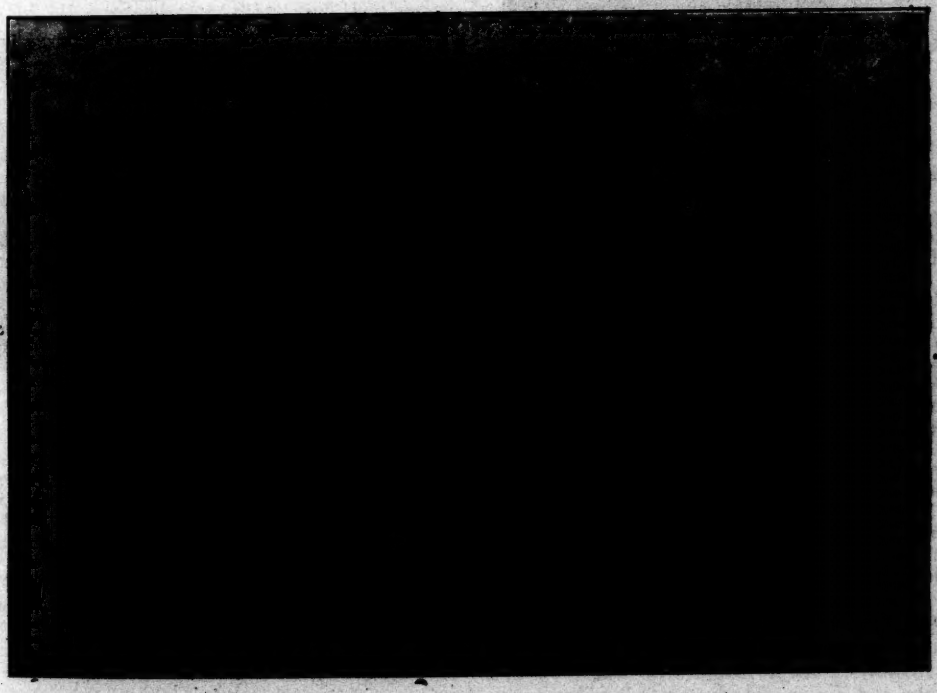
the hands of the Hurons. In the early days of Saratoga's settlement relics of the Indians were frequently found and are even at the present time occasionally unearthed. Fort Edward, Ticonderoga, Glens Falls and contiguous towns are the sites of many of the fiercest battles in the conflict for supremacy between the French and the English. The battle of Saratoga and the surrender of Burgoyne are commemorated by the Saratoga monument, which is well worth the time needed to conjure before one the scenes of Revolutionary days.

The natural beauties of the region may seem placid and unremarkable compared with the Western grandeur of last year's excursions.

The Adirondack Mountains lie to the north; to the west lie the Kayaderosas Mountains, from which many



CIRCULAR STREET.



VIEW OF UNITED STATES HOTEL,

Headquarters of Officers and Committees.

of the springs are thought to come; the Catskill Mountains lie to the south; to southeast are the Berkshires, and on the eastern horizon may be seen the Green Mountains of Vermont; to the west the great State of New York stretches out to the lakes. This splendid panorama may be best seen by a visit to Mt. McGregor, the scene of General Grant's death, which is but six miles from Saratoga and is well worth visiting. The mountain is over one thousand feet above the city, has a large park laid out on the summit, and affords an excellent view of the whole surrounding country, including the Hudson River Valley.

A visit to Saratoga Lake is another desirable short trip. It may be reached by double-decked electric cars, which run through fields and woodlands; the roads of Saratoga are sacred to the horse and to the automobile.

A moonlight trip on the lake is very attractive and the story of the Indian chief may be told in whispers. The story says that the Indian chiefs were convinced

VIEW OF SARATOGA LAKE.

by generations of tradition that the boat of anyone who should speak while on the lake would sink instantly. They consented to ferry a white woman across, only on condition of absolute silence. To convince the savages of their weakness, the woman uttered a loud cry as the boat crossed the center of the lake, only to be told when the boat reached the opposite bank in safety, "The Great Spirit is merciful; He knows that a white woman cannot hold her tongue."

A supper at Moon's Lake House is always in order on such a jaunt, for Moon's dinners are famous. "Saratoga chips" were first made at his hostelry.

The regularly planned drive for Wednesday afternoon should be taken by every one who is free, for at least one long drive is indispensable to a proper conception of Saratoga, for this little village spends $50,000 a year on its highways and they are its greatest beauty, with the long vistas of overhanging elms and the perfect roadbeds. The public speedway, in particular, remarkable for the line of trees down the center, is a picture not to be missed. And then there are great private parks open to the public, like "Yaddo," the home of Spencer Trask, the New York banker, and "Woodlawn," where Judge Hilton, A. T. Stewart's successor, formerly resided. Nor should the hotel gardens be missed. All of them are worth seeing, both by night and by day. They excel anything of their kind on earth.

"YADDO," THE RESIDENCE OF SPENCER TRASK.

The longer trips from Saratoga are most interesting. Those to Lake George, Fort Ticonderoga, Lake Champlain and the Ausable Chasm should be included in the itinerary of every Western visitor who would see a softer type of beauty than is about him in the wondrous western country. The regularly planned trip of the Association is one of great interest.

ENTRANCE TO EXCELSIOR PARK.

To the lover of fresh water and of the canoe a week spent along the water-ways of the Adirondacks will prove a fascinating diversion. With a guide and boat two passengers may be paddled on stream and lake throughout this marvelously beautiful region. All the joys of the wilderness may be had without any of its discomforts, for at regular intervals excellent hotels are to be found.